THE CULTIVATOR.

THIRD] TO IMPROVE THE SOIL AND THE MIND. [SERIES.

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The Cultivator & Country Gentleman.

FLAX COTTON.

Under the stimulus afforded by the scarcity to cotton, efforts to prepare Flax fibre for use on cotton machinery have been numerous, and conducted with great care and labor, during the past two or three years. In our own State there has been the additional encouragement to inventors, of a liberal appropriation now in the hands of the State Agricultural Society, for the reward of success if reached; and a still larger sum was placed by Congress under the control of a commission, by the act passed Feb. 25, 1863, in order that the subject might be thoroughly investigated, and the means of attaining the desired end, in a practicable way, attained if possible, and made known to the public.

From our exchanges we perceive that this Congressional commission have lately published a report embodying the results of their examination, both as to the history, culture and uses of flax and hemp in this and other countries, and as to the mechanical and chemical treatment of the fibres, in order to prepare them for the manufacturer. With a copy of this report *in extenso* we have not been favored, but the liberal extracts from its pages which have appeared, enable us to judge how great progress has thus far been made. We regret that no new light seems to have been gained, nor any brighter promise held out of accomplishing what was sought. That we are not alone in deriving this impression, will be seen from the following remarks in the course of an able and candid review in the Prairie Farmer:

"We can look upon the last, and previous to the careful reading of the report, hopeful clause of the introduction, that declares 'We have continued the research to a point where the most flattering results appear ready to open, and regret that the limit set upon the commission renders it necessary that the pursuit should be relinquished when the desired end is almost in view,' as a straw thrown to the flax cotton substitute men whose fortunes just now seem to be in a sinking condition. Though occasional expressions are dropped here and there throughout the report, giving some hope of success, yet there is no doubt that in the eyes of the commission the substitution of either flax or hemp or any other of the fibrous plants they examined, can never become profitable in those great general uses for which cotton has been found so admirably adapted in all respects. There is a structural difference between them that the manipulations of no machinery can overcome, that will forever preclude their taking the place of the southern staple."

Indeed, the report itself, although leaving its readers to gather the conclusion for themselves, admits that its statements as to the radical differences between the fibres of flax and cotton, are likely to lead the public to the opinion "that they can never really be substituted, because they are so dissimilar." Nevertheless the following recommendation is given, which would scarcely appear consistent with legitimate deductions from the facts under review:

"Under every aspect of the subject, we believe it will be safe to alter one or more fine cotton mills (that are now idle) to give this stock a trial if the same can be purchased at encouraging prices; at first mixed with thirty-three per cent. of cotton, and if successful, to gradually reduce the per centage of cotton until by continued success they may be enabled to withdraw entirely the admixture and thereby demonstrate to the country the practicability of spinning fine flax-cotton yarn on cotton machinery."

With regard to the admixture of flax in fabrics made mainly of wool, the remarks of the committee are somewhat less encouraging than might have been expected:

"As an admixture in fine woolen goods in the form of chemically disintegrated fibre, there are at present no satisfactory results. The failure to obtain such results in this direction is probably owing more to the want of a supply of good material and to the general unwillingness of manufacturers of fine woolens to mix even cotton with wool, than to any intrinsic want of adaptability of flax cotton for admixture. On the contrary, the peculiar affinity of flax for color, (it being equal to wool in this respect,) and its indisposition to excessive fulling, would seem to make it a much more desirable admixture for fine colored woolen goods than cotton. And it is not unreasonable to expect that when there is a sufficiency of supply of well disintegrated and separated refined flax-cotton, that it will be extensively sold for this purpose."

Yet the interest awakened in the subject has not been without some points of advaantage. With coarser woolen goods it has been found that flax may be ad-

vantageously substituted for the former admixture of cotton. The report adds:

"As cordage and for twines, to which, in the cheaper days of cotton, that substance was extensively applied, hemp and flax still assume their pre-eminence and superiority. Even to the grocer's twine, which must be short and easily broken, these fibres have been extensively and profitably applied. Every variety of twine is now made of flax and tow in several establishments. Thread of the best quality for many purposes is also prepared from this material, and for some branches of the arts it has always been deemed superior to cotton. Coarse linen fabrics of every description, from bagging down through burlaps, crash, duck, diaper, &c., have all been successfully made of flax and hemp, where formerly the greater cheapness of cotton had caused that fibre to supplant its legitimate competitor. In the article of seamless grain bags, which were formerly made altogether from cotton, we now have a much better article produced from flax."

Peas as a Green Manuring Crop---No Crop Need be Missed in Growing them.

EDS. CO. GENT.—Some years ago you published an account—written by a travelling English farmer, if my memory is correct—showing how, by the growth of spurry, and particularly of the yellow Lupine, large tracts of light soil—in Prussian Silesia, I think—had been brought from a condition of comparative sterility to a state of comparative fertility, by plowing crops of these plants in as a green manure. I have not time to quote, but, according to my recollection, these sandy tracts were so low in fertilizing properties that wheat was not, and could not, be grown upon them; nay, only the most meagre crops of rye could be produced on portions of these districts, and other portions would not bear a crop of either wheat or rye. This is the substance of the facts as I remember them. I recur to this precedent example to insist on the principle that what has been done so satisfactorily with indifferent facilities, can be more effectually done when and where the facilities are better or more accessible.

In the United States we have a great variety of soils, and every necessary facility for interchanging their most suitable productions as may be found desirable or profitable. Our bottom and prairie soils are par excellence corn lands; the rugged hills are sheep and cattle soils; the light soils of pine wood districts will bear good crops of rye and beans, and fair corn; our stony loams and clay ridges are well adapted to growing wheat, and a good wheat soil is always adapted to producing fair or good crops of peas, as in Upper Canada, for example, wheat and peas are so generally cultivated that peas—that have not derivatively, and never had, any relation whatever with that country—are nevertheless called Canada peas, simply because peas are so successfully and abundantly grown in Canada. Why, I ask, having as good soils and climate, and a far better market, do we not grow more peas?

The pea, as is well known, is very nutritive, and also quite hardy. But it does not appear to have attracted much attention, as a renovating or green manure crop. The lupine may be good, and does well where, as in parts of Europe, it is raised easily from being already acclimated. Clover is the old-fashioned green manure crop—buckwheat being seldom heard much of for this purpose now—and it is none the worse for being old-fashioned, for "man and nature" are both somewhat antiquated realities. But it appears to my view that peas have as good a pedigree for antiquity as can be required in a well descended farm product; that its properties and character are well fixed, and inhere through successive crops, and that, in fact, though too many of us seem to think

"That novelties are butterflies,
To be pursued as food for inanition."

The pea is just what we want *to use* to put our poor soils in a better condition as to fertility.

A fair per centage of clay is necessary to raising peas with good success. And we have an abundance of strong soils with the necessary leaven of clay interspersed among lighter soils, throughout nearly or quite all the middle and northern States. There is every requisite facility for raising seed peas in abundance; therefore what is wanted is a large demand for them. To do a little by way of showing their value for purposes additional to those for which they are generally used, may lead to some increase in their demand and production—at least I have for years believed this ought to be the case.

Let us now see their adaptability as a green manure crop. Pre supposing a supply of seed can be obtained, as always can be done by clubbing and sending to Canada for them till they can be obtained nearer—how and when shall they be planted? I will give my plan, subject to the amended, of course, of growing them for the purpose of plowing them under: Let the ground intended for the crop be plowed in the fall and left rough, or without harrowing. Where there is a wheat drill that can be set quite narrow, drill in at *least four* bushels to the acre, as early as the drill can be used in the spring, first harrowing the ground to fit it for the drill. A light one-horse harrow should now be passed over the drilled ground. If the ground is settled, so much that there is not mould enough to let the drill in, raise mould with a gang plow or cultivator-toothed drag. Then drill *east* and *west*, so as to have the peas shade the ground as early as possible, and harrow with quite a light short-tooth harrow. Where no drill can be had, take a one-horse plow, and after getting mould enough fitted in readiness, plow straight and *very narrow* furrows east and west, *leaning* the plow well to the landside, and setting the furrow mould up in narrow ridges, with as narrow furrows as can be made. When the ground is all furrowed, sow on four bushels of hardy or common field peas to an acre, and harrow *crossways* of the furrow, pulling the mould down over the peas. For this purpose the harrow teeth require to be many of them, and pretty near together. They may be short without disadvantage. A very simple method of shortening the teeth in effect for such a purpose—the harrow needing to be weighted a little on top—is to wind long, slender pieces of brush among the teeth and tie up to the frame with strong twine. Long teeth will pull up some of the peas; hence we want a harrow that will scrape the mould over them, so to speak.

Suppose I have a field that gives but a poor yield of wheat, and I want to bring it up in short meter. Plow it in the fall, as before stated; plant *four bushels* —and not less—of peas per acre, early and well, on it.

This done, we shall have a good heavy crop of haulm by the 20th of May, ready to plow under, which done, we can at once plant to corn, not missing a crop.

As to the properties of the pea haulm, there can be no reasonable doubt but they are substantially the same in character as those of the clover, and that the effect on the soil will be of the same beneficial character. The crop of peas will be quite as bulky as a crop of clover, perhaps more so, but say of equal weight with clover. But the peas being plowed under so much *earlier* than a crop of clover can be, will rot at once, and the growing corn will be forced along by the fermentation of the decaying crop going on in the ground. In this respect the earliness of the pea gives it great value over beans or lupines, or clover, and the growing of the pea crop does not prevent the ground being worked—among the corn—which working is so necessary to promote chemical solution among the properties of the soil, to prepare for another crop of wheat.

Again, it is well known that the pea haulm, in common with clover, contains a full proportion of nitrogenous matter, just such as in a decomposed state the wheat plant appropriates and flourishes with. And it being evident from their quantity of succulent juices, and the early part of the season at which the pea haulm commences decaying, that all of it will be decomposed before spring, when the principal need of the wheat crop for manurial substance will arise. I even believe that the whole mass plowed under will be rotted by the 1st of October. Is not the pea well worth trying, apparently the very best crop for green manuring, then connecting and duly estimating the the considerations already stated?

As to the cost, it is merely a trifle in comparison with manuring either with clover or common or commercial manures. At present I have no need of heavy manuring; but my mind has long been made up to resort to this method whenever plowed ground requires manure and I do not wish to go into rotation and clover farming.

Green Lake Co., Wis. J. W. CLARKE.

Peas as an Intermediate Manuring Crop.--No. 2.

In previous remarks on the value of the Pea, as a crop which appears to be better adapted to the purposes of green manuring than any other, it was stated that the crop might be ready to plow down by about the 20th of May. Perhaps I was somewhat hasty or unguarded in making that statement, without at the same time stating necessary limitations. For although in some seasons, as the present spring for instance, this might be applicable in the northwest, in other years the crop would be later by one to two weeks. As it frequently happens, however, that after a late cool spring we have warm forcing summer weather, it will do to plant early corn in the Middle and Western States even as late as the 1st of June on rich ground. But limit the statement, that corn can be grown upon ground where a large crop of pea haulm has been turned under, to the best corn regions of the country, and we have still an alternative crop that gives opportunities to cultivate or work the soil during the growth of the crop; and this course is, according to my views, better than naked fallowing, whether as to the facilities afforded for killing weeds, or as to the probabilities of good crop of wheat succeeding; the alternative crop being beans, a crop which supplies some of the very best elements of feed, especially in the form of meal for dairy cows in winter, &c., as demonstrated both in this country and in England by experiment, and which—that is, bean meal—must be one of the best kinds of feed for store sheep and lambs that can be found from the nature of the case. I must recur, however, directly to peas for green manure.

When a crop of pea haulm is plowed under in time for corn to succeed, the soil will usually be well worked, the working of itself generally ensuring a fair or full crop of wheat succeeding the corn. It must be the working that is the chief cause of wheat succeeding so well—which is according to general experience—after corn; for the crop of corn—unlike clover or peas, or beans,—takes more nutriment from the soil than it returns, or draws, or in any way insures thereto. It is the working of the soil amongst the corn that supplies, or affords facilities for supplying, more fertilizing matters than the large quantity known to be taken from the soil in a full crop of corn removes. I wish to enlarge a little further upon this view, because in my advocacy of peas for manure I am venturing to a certain extent on new ground.

Boussingault says, (Rural Economy, p. 346,) "There are certain plants which cannot be reproduced upon the same soil advantageously, except at intervals more or less remote. The cause of this exigence on the part of *certain* vegetables is still obscure." I think it probable that Boussingault had what is called the "clover sickness" of Europe in his mind when he wrote the above passage. At any rate, it is certain that in precluding cultivation, the growing of clover prevents latent and native properties of the soil being developed, and interrupts that rapid rate of chemical change which attends cultivation. Admitting that clover itself does not need the fertility arising from working, it is unquestionable that the succeeding crop of wheat or corn does require it. Hence according to this view, the clover course is merely a pastoral alternative of negative rather than direct value in developing latent fertility.

Here let me give my own explanation of the seeming difficulty above alluded to by Boussingault. Clover, or any other crop which *precludes working* the soil while the crop is growing, cannot be often repeated on certain soils, because the presence of such crops for too large a proportion of time prevents the native elements of the ground being developed; such development or renewed fertility being due to increased aeration and chemical change, which is so much facilitated by working or cultivation, and must needs bear a relative proportion to active cultivation itself. Though clover draws less mineral matter from the soil than the cereal crops, it may nevertheless preclude the development in an available state of even enough of such matters for its own full development, by precluding active cultivation for so long a period during a rotation. This is at once my explanation of the seeming enigma referred to by Boussingault, and an apparent objection to the cultivation of clover on soils that contain much fertilizing matter in a latent, inactive, or unavailable condition

It also appears to me that summer fallowing, though affording excellent opportunities for *killing* weeds, such as witch grass, thistles, &c., and for which alone a fallow is necessary, is objectionable in not affording the best facilities for promoting and hastening chemical action in the soil itself. I have never seen this objection advanced; albeit it does appear that naked fallowing retards chemical action, and precludes that more rapid development of latent matters of the soil into an active available state, which takes place in the ground when the crop growing upon it is actually worked or cultivated. The reason of the difference is this: A certain and sufficient degree of *humidity* is necessary near the surface and just within it, to absorb and retain a sufficiency of heat to effect chemical changes in the mould, or among its particles, and rows of corn or beans shelter the spaces between them, maintaining a degree of comparative stillness in the local air there, and preventing the moisture being evaporated and dissipated with anything like the degree of rapidity with which the air near the ground is dried on a naked fallow field. Moreover, the shade of the rows prolongs the presence of the necessary moisture by retarding direct evaporation. Rapid drying away of that degree of moisture necessary to rapid chemical action and change of latent matter, is thus prevented by the presence of the growing crop, while the working of the ground among the plants causes a rapid interfusion of moist air, and so leads to far more active and rapid changes of latent and inert to active and fertilizing or available elements in the substance of the soil, than can be reasonably anticipated or possibly take place in a similar soil worked as a bare fallow, nor is a bare fallow so favorable for starting the growth of weeds.

It is generally understood that wheat succeeds admirably after corn, and when the fact, before alluded to, that corn takes more than it gives, is considered, the success of the wheat following it can be explained in no other way that I am aware of, except the foregoing—that working develops the latent properties of native matters of the ground. And this explanation being consistent with general experience, is it not sufficient? But wheat succeeds even better after beans than after corn, according to my experience, even if the corn ground receives fair manuring. And this can be accounted for only by admitting that, supposing the benefits of cultivation as between corn and beans to be equal, the matter drawn from the atmosphere by beans is more than that left in the ground from the manuring after the corn has done appropriating manure, and as corn draws largely both on the soil and manure, I believe most soils will be better prepared to sustain and produce a full crop of wheat, by from 15 to 30 per cent., after a well *cultivated* crop of beans than after similarly cultivated crops of corn.

On soils that are thin and lean then, but where rapid and large production is an object of importance, and the ground can be plowed in the fall, and a good growth of peas has been turned under, viz., from the 20th of May to the 15th of June, according to latitude and other causes influencing the earliness of the season, in a given locality. And beans, of the two, will leave the ground in better condition for wheat, because they draw more upon atmospheric matters for their growth, while in far northern latitudes the bean will be better adapted to the climate or length of season. Furthermore, a bean crop will leave nearly the whole of the manure resulting from the decomposition of the pea haulm, unappropriated in the ground, ready to sustain a growth of winter wheat in the fall, where winter wheat can be raised, or spring wheat, if in an open country, &c., as the case may be. There are doubtless many fields of wheat that will be light, and not remunerative, because the ground is too poor, or has been insufficiently worked. In either case, or, as is probable, if both defects operate in combination, is not the remedy I have pointed out a plausible one at least? My experience as to beans has convinced at least one farmer of its being a sure remedy, otherwise a certain mode of raising full and even large crops of wheat; and taken together I have full confidence in it, and feel assured that any reasonable expectations based upon the principles and practice suggested will not be disappointed in resulting experience. J. W. CLARKE. *Green Lake Co., Wis.*

Recipes for Cooking Green Corn.

A Corn Grater.

In Nantucket and New Bedford, where green corn puddings, soup and cakes, originated, a *corn grater* is always used, as pounding corn in a mortar always imbibes the taste of spice, unless a marble mortar is kept expressly for the purpose. Mr. N. Waterman, at No. 5 Essex-st., Boston, makes them from the Nantucket pattern.

Corn Pancakes.

Boil eight or ten ears of corn—pass a sharp knife down each row, and with the back of the knife or a spoon scrape off all the corn, but be particular to leave the hull on the cob. One gill new milk, two teaspoonfuls salt, two eggs well beaten, and as much flour as will make a batter as thick as griddle-cakes. Then add the corn. Have the lard boiling hot, and drop a tablespoonful at a time in it. When brown, serve hot for dinner.

Corn-batter Cakes.

Grate eight or ten ears of corn—use a spoon to get the gist of the corn from the cob—be careful never to scrape it so hard as to get off the hull. Make a batter of 1 quart milk, 4 eggs, and flour enough to make it as stiff as usual griddle-cakes; one small teaspoonful soda, one and a half cream of tartar, a teaspoonful salt; mix all well together. Have the griddle hot and buttered; drop a tablespoonful of the mixture, and when brown on one side, turn them to brown the other. Serve with butter.

Corn Soup.

Boil twelve ears of corn—which should be young and tender—in four quarts water. Take the liquor in which they are boiled, and put in a knuckle of veal or piece of "soup beef." If no grater is to be had, use a sharp knife to cut down each row of corn. Then with a spoon scrape off all the corn, leaving the hulls on the cobs. Put the cobs back into the liquor to boil with the meat three or four hours. Strain all through a sieve, set it aside to cool, and skim off the fat. Mix four tablespoonfuls flour with a quarter of a pound of butter. Put the liquor into the pot, add the flour and butter and corn. Season with pepper and salt. Boil half an hour, and serve. If a stock is on hand use it, in proportion to its strength, with the clear water. This should make two and a half quarts soup. The knuckle of veal or beef can be again boiled for second stock.

"AN OLD HOUSEKEEPER."

Never give to all nor contend with fools.

FATTENING ANIMALS IN A HURRY.

We have pointed out in former years the futility of attempts to lay heavy masses of flesh on poor cattle by stuffing them with rich food. Such attempts not only prove to be failures, but are always wasteful. The material consumed is nearly lost, the animals remain comparatively poor, and the owners are convinced that fattening animals for market "don't pay."

It is perhaps well for the cause of good management that all neglected treatment of animals should result in loss to the owner. If he has starved his cattle, sheep and pigs for a year or more, he cannot atone for it by sudden attempts to push them to fatness. On the contrary the only true way is to see that growth continues without cessation, summer and winter, from the earliest period of their existence till they are finally sold in market. A single check given to this continued progress may arrest or retard it for months. Our own observations lead us to the opinion that the whole profits resulting from raising and fattening, when this continued progress is kept up by careful, regular but not extravagant feeding, are at least triple the amount realized from early neglect and heavy feeding afterwards—and often the difference is many times greater than here stated.

There is nothing that should be more strongly impressed on the mind of the young farmer who makes the feeding of animals a prominent part of his business, than the importance of keeping up an unremitting growth throughout the whole course of their existence. The most successful pork-raiser with whom we are acquainted, adheres strictly to this course; not only feeding his store pigs well and regularly through fall and winter, but commencing the fattening not merely in autumn, as is too commonly the case, but *early in the spring*.

It is objected that this management is too expensive. This objection is urged by those who find two or three months only to consume more than they can afford. They feed heavily for a short time, but do not receive a corresponding return of increased flesh. "If two months feeding," they inquire, "costs us so much money, how can we ever afford to continue it for two or three years?" It is very true they cannot, because the whole system which they adopt is a profitless one. Fortunately it does not require heavy feeding to keep up the continued growing condition of animals. Here is a great error into which many have fallen, which we have endeavored to correct. John Johnston made the remark some years ago that the copious feeding of grain or meal to cattle is no better than a moderate amount. We gave the statement some years ago of experiments performed by G. H. Chase of Cayuga county, who carefully weighed every week all his fattening animals. A daily supply of four quarts of barley meal to a fine steer, gave a weekly increase in weight averaging 18 pounds. A neighbor advised him to *push* him, and eight quarts were accordingly fed daily. The weekly increase of flesh was less than when he received four quarts. The amount being increased to twelve quarts per day, he gained nothing at all. Several similar instances have come to our knowledge, and among others a fine animal was recently fed by a neighbor a peck or more of rich meal per day. After thus urging on the fattening process as he supposed, for several weeks, he was finally sold and proved to be only a few pounds heavier than when purchased. The many bushels of feed which he had consumed and the labor of attendance given him, literally went for nothing.

Successful feeders, who prove all their experiments by weighing, have long since ascertained that animals in fine condition will lay on more flesh for the amount of food eaten than those of inferior character. Hence shrewd men will not purchase lean and raw-boned animals for fattening. This fact serves to establish the truth that all animals at all stages of growth should be kept fleshy. It may be scarcely necessary to remind any intelligent manager that the difference between attending to all the comforts of an animal by cleanliness, good wholesome food given regularly and in moderate quantity, and neglecting all these particulars, is simply the difference between those in fine healthy condition and such as are feeble and raw-boned. It may be laid down as true, with scarcely an exception, that the farmer who carries on the business of fattening at a loss, is one who neglects at one time and over-feeds at another.

COOLING WATER.

Eds. Co. Gent.—In your paper of June 8th there is a paragraph headed "Cool Water," copied from the Maine Farmer. The substance of this article appears periodically, and I have no doubt causes a great many unscientific people to waste their time in trying the experiment suggested; which can only end in disappointment, and an increased disgust for "book learning."

It is a fact not to be disputed, that evaporation will cool the body from which it takes place, but it is also a fact that this cooling only amounts to a slight change of temperature, that is, 5° or 10°, sometimes as much as 15°.

As I write I have a hygrodeik before me, which indicates that the temperature of the air is 82°, and that the temperature due to evaporation is 70°; or in other words, under the most perfect arrangement for cooling by evaporation, I should be able to keep water at a temperature of 70°, or 12° below that of the atmosphere. Allowing for imperfections that would attend any arrangements for cooling a quantity of water sufficient for drinking purposes, we ought not to expect to effect a lowering of temperature of more than five or six degrees, an amount scarcely appreciable and certainly without practical value.

The rapidity with which evaporation takes place, and consequently the amount of heat lost, depends directly upon the condition of the air in regard to moisture. In very dry air evaporation takes place very rapidly; in air already saturated with vapor, no evaporation can take place. In other words, evaporation takes place with more or less rapidity in proportion as the air is more or less dry.

And as the temperature due to evaporation depends upon the rapidity with which evaporation takes place, we may say that the amount that water may be cooled by this process depends upon the state of the air in regard to moisture. That is, in dry air from 5° to 8°—in moist air not at all. William Edson.

Boston, Aug. 6, 1865.

THE SUPPLY OF FRUIT.

In a season like the present, when the apple and pear crop are so much smaller than they have been for so many years past, fruit raisers naturally ask the question, what shall we do for our usual supply of fruit for family use! The answer may be a difficult or unsatisfactory one, so far as the present season is concerned, but we may all learn something in relation to insuring a supply in future. Those who confine themselves to a single kind will be liable to an over supply in one season and a deficiency in another. If the land owner, for example, plants an apple orchard only for early, medium and late sorts, he will have all that he wants, and an overplus besides when the year proves favorable; but he will be annoyed by such a deficiency as the present in unfavorable years. The true way to avoid this difficulty is to provide as many legs to one's stool as possible—or, in other words, to secure as great a variety of kinds as may be practicable. We do not mean by this a very large number of varieties of each kind. Thus in one year apples may be abundant, but peaches and grapes may be entirely deficient. During another season the reverse may take place, and it is therefore desirable to plant all the kinds that are easily cultivated. Taking the circle of fruits and beginning with strawberries and the earliest cherries, to be successively followed by currents, raspberries, the earliest pears and apples, apricots, early plums, blackberries, and subsequently by the general supply of apples, peaches, pears, plums and grapes, terminating in the following winter and spring, with winter pears, packed grapes and winter apples, we shall find on an average a certain percentage or rate of failure in different kinds—in some localities there will not be one failure in ten among these different fruits; while in others the deficiency may be as one to five, or one to three, as the case may be. All we have to do therefore is to enlarge our number so as to insure a certainty of a supply from one or more. The present year, for example, has furnished us a profusion of strawberries, a good supply of currants where the hellebore treatment has been promptly given to the currant worm; raspberries and blackberries are bearing well, and so far as present appearances indicate, we shall have good crops from most varieties of the hardy grape. There must be an increased reliance on the grape, for although it may fail in some seasons, the cause of that failure is unlike that which destroys the crop on most of our fruit trees. The latter is often the result of severe winters, and very frequently it is caused by abundant rains about the time of blooming. But the grape is never winter winter-killed in the fruit-buds, nor by the rains of spring, because the fruit is formed on the new shoots, which grow at a later time of the year.

Of all the kinds growing on *trees*, the pear is perhaps the most reliable for all seasons; in the present, however, we have the rare exception of a very small crop. The best hardy grapes scarcely ever fail; we should therefore plant them more extensively for family use. New sorts for excellence in quality have been added to our list within a few years; attention is more recently given to the production of varieties of extreme earliness; while those for long keeping through winter are not overlooked, and will yet receive more attention than now, when families come to rely upon the grape for a general winter supply. We strongly recommend a larger planting of the vine, not so much for making money by marketing on an extensive scale, as for an abundant home consumption.

Let us compare the grape with the apple, for the amount which may be obtained from a given area of land. The most productive apples, such for example as the Baldwin and Rhode Island Greening, have yielded in good seasons at the rate of some 400 bushels to the acre, while 100 or 200 are a more common crop. Taking 15 or 20 of the best or most popular sorts, we shall probably not be able to rely on much over 100 bushels to the acre, through the vicissitudes of different seasons—or not over three or four tons. Now, in ordinary vineyard management, four tons do not constitute an extravagant crop for such excellent sorts as the Isabella, Concord and Delaware. Some of these have yielded over six tons per acre. It may be questioned whether, on the whole, the apple orchard will yield much more than the vineyard; the latter, it is admitted, requires far more care in cultivation and pruning, and more attention also in preserving the fruit. But we are all learning that fruit should have as much care as corn, turnips and potatoes, and are becoming willing to give it.

While therefore we would not diminish the amount of land given to strawberries, currants, raspberries, gooseberries, blackberries, and to cherries, apples, peaches, apricots, plums, pears, &c., we especially recommend at the present time, a larger attention to the best hardy grapes.

ORCHARD CATERPILLAR.

The vast numbers of these caterpillars in many parts of the country admonish orchardists to destroy them before they make such progress again as they have the present year. Some apple trees have been entirely stripped of leaves—not only rendering a crop impossible, but checking the growth of the tree at the most important period of the year, and rendering it liable to injury by winter, and retarding its vigor in future. It is not too soon now to commence the destruction of the eggs, which have been recently placed upon the young twigs. As they are usually on the projecting shoots, near the outside of the tree, the practiced eye will quickly detect their presence, and a single clip of a pair of orchard shears, placed on the end of a pole, and worked with a cord, will bring them to the ground. This is much easier than the more laborious and more uncertain process of brushing, swabbing, winding, thrashing, pounding and crushing, after the caterpillars are half or wholly grown, for no individual escapes when the little ring of eggs is taken off entire. In the autumn, after the leaves have fallen, pass around again and clip out the remainder. By going through the orchard at least two or three times, there is less chance for any accidentally hidden rings to escape. A cloudy day should be selected, so that the light may not dazzle or injure the eye; and after some practice, it is surprising with what quickness any one may detect these rings on the twigs, by a glance over the apple tree. Cherry, pear and other trees should be examined in the same way.

A careful attention to these instructions any time

before the coming spring will completely clear orchards of this pest, and the owner will have the satisfaction as he passes the trees, of seeing them full of healthy foliage, without the annoyance of witnessing these huge nests on denuded branches.

PLANT LICE---The Hop Aphis.

MESSRS. TUCKER—I think I must have inadvertently left the letter of your correspondent containing some inquiries respecting the Hop Aphis, at your office, as I do not, on reaching home, meet with it among the other slips and papers which you handed me. So near as I recollect the principal query of the letter related to the state of this insect in autumn and where it lurks through the winter.

Most of the species of this family of insects—the Plant Lice—after bringing forth living young all through the summer, become oviparous at the close of their career in autumn, depositing their eggs loosely under scales of the bark, or in any other sheltered situation presented by the different kinds of vegetation they respectively infest; which eggs, surviving the winter, start the species into active life again the following spring. But as the hop vines are all pulled down and destroyed when the crop from them is gathered, the question very naturally arises what becomes of this insect from that time till the vines start up again the next year? A corresponding case was presented by the grain aphis, when it suddenly appeared in such myriads in our grain fields in 1861. As the grain is all ripe and harvested in August, why would not this insect upon it then perish of starvation before any fall sowed rye or wheat would be sprouted from the ground, some two months after, for it to resort to? And on particular investigation I discovered that after the grain was ripe the grain aphis took up its abode upon the grass, on the juices of which it was sustained until the young rye had started up, when it forsook the grass and went back to the grain. Something analogous to this we know must occur with the hop aphis. It must temporarily resort to some other vegetation, on which to maintain itself when there are no green and growing hops for its accommodation.

So long as this hop aphis has been known in Europe we should expect this important point in its history would have been fully ascertained and distinctly mentioned in our foreign accounts of this insect. Yet such is not the fact. Only in the admirable article on the the Hop and its Culture, by Mr. J. M. Paine, in Morton's Cyclopedia of Agriculture, vol. ii, p. 55, have I met with anything explicit upon this subject. It is there stated as follows: "Dr. Plomley of Maidstone, in his excellent lecture on blights, informs us as the result of his personal observation, that the hop-fly, in May, proceeds originally from *sloe bushes*. He also positively asserts that the autumn generation, as we have supposed, is oviparous, and that the flies deposit their eggs in sloe bushes, whence their progeny emerge into the hop grounds in the following season." It is scarcely necessary for me to remark that the sloe is a European species of wild plum, from which many intelligent observers suppose our common garden plum has been produced by cultivation.

This statement of Dr. Plomley is corroborated by the fact that, on another species of wild plum, to wit, the *Prunus Mahaleb* of botanists, M. Fonscolomb met with a species of aphis different from the *Aphis Prunî*, the common aphis belonging to the plum, and which he accordingly described as a new species, naming it *Aphis Pruni-Mahaleb*. But subsequent researches show that the insect which he thus described is identical with the hop aphis.

This is all the information I have been able to find upon this subject. From it I come to the opinion that when the hops ripen and their leaves become dry and juiceless, all the small and wingless lice upon them perish, whilst those that have wings fly away to the nearest plum trees, on the leaves of which they sustain themselves, until they have deposited a crop of eggs, placing these probably in the crevices of the bark, where they remain through the winter and hatch with the warmth of the following spring.

East Greenwich, N. Y., July 22, 1865. ASA FITCH.

Strawberries at St. Joseph, Michigan.

We have had a good supply of rain so far this season. Strawberries produce well. The average yield per acre was about 70 bushels, for which the growers received $5 per bushel *nett*, that is, after deducting freight to Chicago, commission for selling, &c., making the snug little profit of $350 per acre. Some of the growers fell short and some went above the estimate I have given. One grower netted only $700 from five acres. Another cleared $500 from one acre. Another received $260 clear profit from one quarter of an acre of Wilson, thoroughly cultivated and runners kept off. Triomphe de Gand is grown to some extent, but the Wilson pays better at $5 per bushel, than any other well tested sort at $10. The Agriculturist, Russell and Tribune strawberries, are being cultivated somewhat, but not yet fruited much. The shipments of strawberries from this port to Chicago this season, amounted to 2,000 bushels, and the business seems to be just in its infancy. The steamers leave here daily at 8 to 9 o'clock, P. M., and before daylight the next morning our fruit is in Chicago, fresh and nice; no damage from jarring or jolting, as on the railroads.

Next season I intend to plant on thoroughly prepared ground, an acre or more of Strawberries, in squares or rows both ways, two feet apart each way. This will be 10,890 plants per acre. I shall be particular to get vigorous, strong young plants, and shall cut runners once a week if necessary. I shall keep grass and weeds thoroughly subdued by the use of a hand cultivator with a wheel, pushing it before me, passing through the rows both ways. If the soil is *thoroughly* and *deeply* stirred before planting, the use of a wheel hoe or hand cultivator with a thin, sharp blade, will be sufficient. On smooth ground, free from clods and lumps, one man with a wheel hoe properly made, can do as much work as four men with ordinary hoes. A. BABCOCK.

St. Joseph, Michigan, July 17, 1865.

A Minute Pudding.

One quart new milk—boil, salt, stir in one cup of flour; boil and stir in two eggs well beaten. Serve with a good sauce, and eat with a *good* relish. T. R. S.

ABOUT GRAPES AND WINE.

The wild grape in all its multitudinous varieties is very abundant all over Hartford county. Great quantities of syrup—made one quart must, two quarts water, with sugar enough to make up the gallon, are manufactured annually from this source alone. This syrup is sold for one and two dollars per gallon. Our people like it because it is sweet. We consume more saccharine matter than any other people; hence the preference for sweet wine. But a good wine has been made from the Fox grape without sugar. Last season I ground these grapes—they were the best varieties of Fox grapes cultivated. Let the pomace be in the vats about two days, then pressed off into clean casks, and fermented so as to exclude the outer air. The object in allowing the pomace to lie and ferment so long before pressing, is to secure rich color from the skin and thin down the thick clammy nature of the Fox grape, so as to extract the whole virtue of the fruit. I have sometimes ground the grapes into large casks and let it stand for several years, and produced good wine in that way.

But the before-mentioned method is the best of my experience. The wine—not yet a year old—resembles the German wine so much used by that people in both countries. Good judges pronounce it a superior article. I shall bottle it when a year old, after putting in a gallon of brandy to twenty of the wine, giving one tablespoonful of loaf sugar to each bottle. This will produce a slight fermentation, which will give briskness to the liquor when drawn. Such wine as that will prove a wholesome beverage, and where grapes are so plenty as here, can be produced for one dollar per gallon.

The Fox grape is hardy, and every way adapted to the soil and climate. I never have seen mildew nor rot in any of its varieties. Self-planted and self-nourished, it flourishes equally well in swamps and along the banks of meadow streams. Whether extending over ricks and wall-fences, or mounting the lofty maple, it yields its annual crop when the apple proves a complete failure. Most of the fruit is too rough for good eating, but I have eaten some varieties, and several good judges speak of them, that compared well with the Isabella. It is these best specimens that I have transplanted to the garden. We have them ready for table by middle of August, fully two weeks before Hartford Prolific.

But the Fox grape never will compare with the new varieties now introduced and cultivated, either for the table or for wine. We can say of it, however, that it is sure when all others fail. My vineyard has been visited this year with mildew and rot. More than half the Prolifics have rotted, and mildew is upon the bunches that remain, whether trained to stake or trellis. Shouldered clusters of Concords are pinched with the same curse. Isabellas are affected only to a slight extent. Rebeccas have some mildew and a little rot. Norton's Seedling, Catawba, Diana, Northern Muscadine, and Delaware, are sound and good so far, but it is not too late for the blight to fall upon them. The Clinton, like the Delaware, proves always hardy. It is one of our best grapes for wine, and is the best for winter use, keeping till spring.

Are other vineyards afflicted in such a manner as mine? My soil is heavy loam, and deep; some of it sets on a subsoil of gravel and sand. I manure with muck compost, and cultivate all sorts of vegetables. The ground is set to pear trees,—standards and dwarfs alternating,—with vines between the trees in the rows. The fruit trees are all healthy, and cannot be surpassed for thrift or beauty. If the ground is not too rich for the pear, then the grape ought not to fail. Good corn land is right for the vine or orchard. I am sure it is not the manure that causes the rot. The trouble must be in the season. When fruit trees were passing from bloom, we had several weeks of northeast wind and storm, with very little sunshine; everything seemed to push forward with unprecedented rapidity. When the storm cleared away, and the sun shone out, the leaves began to wither and fall from the trees. Apples which had a very full set were mostly destroyed; so of peaches and pears. It was this succulent development of wood that weakened and deranged the vine, producing at this time the rot in fruit.

My grapes under glass have not as yet shown any mildew. I watch for its first appearance to sprinkle the vines with sulphur. To diffuse the flour over all the vines, I use a tin syringe, about eighteen inches long and two in diameter, one end perforated with small holes, the sulphur poured in, and ejected by a wooden follower. It is the best thing for the purpose; it is equally good for lice on cabbages, or bugs on vines. I should have used it on the outdoor vines had I anticipated any such trouble there. Will not other cultivators give us their experience with the vine? A. L. L. *Granby, Ct., July* 22, 1865.

Who shall Address our Agricultural Fairs?

It has long been the custom at the annual gatherings of Agricultural and other societies, to have an address delivered touching the object of the society or association. All the different societies for the advancement of knowledge, literature, mechanic arts, science, history, law, medicine, and divinity, select some one to give an address at their annual meeting, pertinent to the object of the society, on some subject of practical importance to its auditors. This is very befitting, and generally develops something new or useful on whatever subject they may treat. All of these organizations generally select one of their profession to deliver the annual address. This is as it should be, for one of their own profession is better qualified to interest them, than one of another profession or calling. He knows the history and objects of the socity better than one whose thoughts have been trained to other intellectual developments. This is as it should be. These annual meetings have been productive of an incalculable amount of good, and have awakened an interest that nothing else would. How is it with the agricultural societies? Are they addressed by one of their members? It is a lamentable fact that a majority of the addresses at Agricultural Fairs are given by those belonging to "the learned professions." This should not be so. There ought to be farmers within the bounds of every society capable of giving the annual addresses. They may not be in command of elegant language, or able to make rhetorical flourish in beautifully turned periods;

but they may do what is of more importance, give an address embodying sound practical views in all that pertains to progress in agriculture. It would be looked upon with surprise to see a farmer addressing a society for promoting the interests of law, medicine, or divinity, but just as appropriate as it is for men who have never held a plow, or swung a scythe, or performed the simplest duties of agriculture, to attempt to instruct men who have grown gray in the pursuit of agriculture, as to the best method of cultivating our farms, what crops are adapted to our soil and climate, what leading staple is most profitable, or what breeds of stock are best adapted to the different branches of agriculture. These are important questions, and none but those of large practical experience can answer them to our profit.

There is no reasonable excuse for the meagre knowledge of many farmers at the present day, when such an amount of useful knowledge is thrown by the multitude of books, and on all subjects of interest to their calling. But few employments give men so many leisure hours with their families, or more time for mental culture, if they would improve as they might. Farmers are beginning to think and read more than formerly, and hope the day is not far distant when their acquirements will enable them to take a higher stand, and dispense useful knowledge to those around them. HIRAM WALKER.

Mexico, Aug. 1, 1865.

Breeding and Management of Colts.

Before commencing this subject, I wish to say that my remarks will be addressed more particularly to farmers who raise one or more colts a year, than to gentlemen who make breeding a business, for the latter class are not apt to fall into the errors that the farmer quite frequently does. I shall commence a little differently from what writers on this subject generally do, and with what I consider to be the most important part of breeding—with the Mare.

This, the starting point, is where farmers are too apt to make their greatest error. They quite unfrequently select for this purpose the poorest mare they have, and one that is totally unfitted for anything else, by lameness, blemishes, or old age; and if questioned why the best instead of the poorest was not selected, the answer very often is, that she was too good to raise a colt from. Now I do not think there ever was a mare too good to raise a colt from. The nearer perfection she is, the more excellencies may be looked for in her offspring. In the first place she must be sound, and have a thoroughly strong and healthy constitution, or else she is not fit to be a mother. Blood and speed are both desirable in the brood mare, but not absolutely necessary, even though you wish to raise a trotter. Blood from the sire, size and beauty from the dam, is an old rule among breeders.

If the mare is a thoroughbred, and has the proper form and qualities for breeding purposes, it is all the better; but she had better lack the blood than the requisite shape. If possible the horse should be of purer blood than the mare. The mare should have a small, lean, boney head, a good cheerful countenance, and an upright sprightly carriage. The head is an important point to be considered, as that indicates her disposition. The neck should be brought out of the top of the shoulders, not the bottom, and thin at its junction with the head; the shoulders long, oblique, strong and muscular; withers high and thin, deep in the chest, rather long from shoulder to the hip, to give plenty of bedroom for the foal. The hips cannot be too broad in the brood mare; the loin should be arched, and the quarters droop a little; the legs short, long above the knee and hock joints, and as short as possible below; feet large, round, even, and dark colored; heels open but not low. The best age is from four to twelve years. I do not not expect every farmer to have a mare answering this description, for I am aware that perfection is not plenty in this world, but if one would breed horses with pleasure and profit, he must select a mare with as many of the important qualities as possible. The size of the mare must depend upon the size and kind of colt desired to produce, for the mare has much more influence on the size and shape of the offspring than the sire. For the road or farm uses, I should say 15½ hands was the best height, and should not vary above 16, or below 15 hands. Too much cannot be said in favor of sound mares for this purpose. If a mare has an equal show of good and bad qualities, more of the bad qualites will be inherited than the good ones. Unsoundness of all kinds is more hereditary from the dam, than from the sire, and particularly bone affections, such as ring-bone, spavin, &c. I may have got this impression from the fact that a great many mares of this kind are bred from every year, while but very few horses are kept for service having these affections. Before putting the mare to horse, she should be brought into the most perfect state of health, by proper exercise, grooming and plenty of good nutritious food. She need not carry an excessively glossy coat, and is better not to be loaded with fat. During the entire time of her pregnancy she should be well fed, and will be benefited by doing ordinary light farm work, until within a month or six weeks of foaling, when she should be turned out by herself where she can be seen every day. Drawing heavy loads, and travelling at too great a rate of speed, are injurious.

If speed is desired in the colt you intend to raise, the straight or upright shoulder should be carefully avoided in the mare, but if it is for draft purposes, that make of shoulder is very desirable. It is almost impossible to have speed combined with an upright shoulder, and they make unpleasant road horses, because they are apt to stumble; the action forward is not high enough for anything except slow work, H. C. W.

(To be continued.)

TRANSFERRING BEES.

GENTLEMEN EDITORS—I had three hives of bees in old hives, two of them box hives after Mr. Quinby's book, and one the first hive I made at the commencement of my experiments, and placed a swarm in it June 18th, 1860. They had each given me one swarm this season. On the first day of August I resolved to transfer them to my new hives. I took the first at 6 o'clock in the morning, and succeeded in placing it in the new hive, and on its stand—time, 1½ hours. I commenced with the second at 2 o'clock, P. M., and found it to occupy some 2½ hours. I commenced with the third at 6 o'clock P. M., and had the bees very satisfactorily transferred, and upon their stand, in 1 hour. I made the transfers unattended and unassisted. I think I should not hesitate to improve either part of the day for transferring, but should prefer the last hour and a half's sun in the afternoon, or begin one-half hour before sunrise in the morning. JASPER HAZEN.

IRON PIPE FOR CARRYING WATER.

EDS. CO. GENT.—In your issue of the 13th, in speaking of conveying water from a spring, in answer to an inquirer, you advised the use of "lead pipe."

My object in noticing this article is to call the attention of those of your readers who contemplate using pipe or tubing, that wrought iron pipe, commonly known as gas pipe, is not only much cheaper, but better adapted for the use of farmers, and is perfectly free from any poisonous effects.

This pipe is very strong and durable (much of it being used for steam purposes.) It can be had as it comes from the factory, or coated with zinc, both inside and outside, to prevent its rusting. It is made in sections of different lengths and screwed together, and of all sizes from ¼ inch to 3 or 4 inches in diameter, measured from the inside. To be used with this pipe are elbows, bends, return bends, crosses, T's, reducers, and a host of other joints and fittings, so that any angle or bend can be made at any desired point, and of any shape. Cocks, valves and intersecting branches can be inserted anywhere, and can be either larger or smaller than the main pipe without any extra work. This can all be done by any man of ordinary intelligence, and requires neither fire, sodder nor expensive tools.

This pipe is sold by the foot, and not by the pound, and if I remember rightly, two feet of iron pipe will cost no more than one of lead. And it matters not how many different places one may buy pipe and fittings, they will always be sure to fit if of the same diameter.

Any person wishing to use this pipe, can measure the distance the pipe is to go, and note down where angles, cocks, etc., are to be placed, and the dealer of whom he purchases will have it cut so as to come together to a fraction. All the tools necessary to do the work, is a pair of gas-fitter's tongs for each sized pipe; these can be bought or borrowed of a gas fitter, in a neighboring town. J. S. D. *New-York, July 21*

IMPORTANCE OF UNDERDRAINING.

[In publishing the following, it is scarcely necessary to premise that the "Agricultural Fund" referred to, being appropriated by Congress for a certain fixed purpose, could not be diverted from that purpose by the States, to any other, however important in itself it might be considered.]

TO THE COUNTRY GENTLEMAN—Through your journal I wish to suggest to the people of the several States a different application of the coming agricultural fund for colleges and experimental farms.

It is that each State shall loan this money, and more with it, for five years to any farmer applying for it, for the exclusive purpose of *underdraining a portion of his farm*, paying only a small interest for the money.

My reasons for the suggestion are: First, that the *first requisite* toward improved farming is *underdraining*—second, that this fact is to so many unknown, and by others unappreciated—together including us all—third, that the means at hand and at a low interest might yield just the encouragement needed.

As the amount of funds will be limited let the sum be apportioned to each county pro rata, and limit each man to a small per cent. of his land in cultivation.

Thus all over the State, in every neighborhood, our people can *see* the effect of underdraining; and seeing, they must and will appreciate the benefits. In the five years the increased yield of a field will repay the cost of its drainage, and at any rate the money comes back and can then be applied as Congress requires, in agricultural colleges. By that time our whole population will be educated in the first great lesson of agricultural improvement, and ready to receive and experiment upon the teachings of scientific farming.

I read in Judge French's writings, that a government loan had been adopted in England, and the result all that was anticipated—"nearly the whole island being now underdrained."

I wish the judge would consider the present opportunity for doing the same thing in this country, and lend the aid of his efficient pen. It is not antagonistic to the colleges, but would become a powerful stimulant to their establishment and future usefulness. Five years may seem to a *fast people* a long postponement; looking forward it may, but in looking backward it does not.

Arguments at full length, and detailed plans for disbursing, securing and re-imbursing the money, will suggest themselves to every thinking man, and need not be here dwelt upon. If the object is admitted to be primary and superior even, to the college, and if the proposed diversion of the money is practicable and prudent, it only remains to agitate the subject until the public mind and those who have the authority, shall set about it.

If this article shall be the means of soon causing a ten acre lot to be underdrained in every township in a State, the author will think he has done more good in his time, than he had ever before hoped.

Fort Wayne, July 22. J. R. S.

THOUGHT IN FARMING.

Forecast, energy, perseverance—what will they not accomplish? Not the majority of farmers lay their plans for years ahead, but wait the time of action, and then have no well digested plan, and perhaps no plan at all, with which to commence and carry on the operations of the season. All this is wrong, for the habit of planning is one of the *elements* of successful agriculture. There are many failures simply from this one point. Forecast should accompany energy and perseverance, for without it they will not work to the advantage they otherwise would with the proper forethought. What we want, is greater mental application, more enlarged and careful thought, with the energy of purpose characteristic of the successful man of business, and we shall succeed. "Success is secure unless energy fails."

"Farmers should look ahead several years to raise good crops." There is as much need for thought in the farmer, and I think more, than there is in the business man of the city, because the farmer has a more varied business—more things to think of. Things that to succeed with must be studied, because of a nature requiring a long time before the returns come in.

Another essential to good and profitable management, is "ability to *buy* in the cheapest and *sell* in the

Mr. Mitchell, in "My Farm of Edgewood," says: The faculty of right *spending* is at the bottom of all signal success in agriculture; but I would rather think that the faculty of right *selling* is the primary element, because to be able to spend aright, one must have the means to take advantage of the market at the right time, and how is he to get them unless he has sold first? And if in his sales he has sold in the cheapest market, it will make a great difference whether he can spend aright or not. To get the means he must sell, and unless he has the ability to sell in the dearest market, he loses just the difference between the best price obtainable and the best price obtained, which often would have made a profit, but only now serves to lessen the income list, and which must be charged to the want of the *right-selling* ability.

As a case in point, I know of a farmer not far from here, who had 300 bushels of old wheat, for which he was offered $2 for 200 bushels, and $2.05 for the other 100—$605 for the lot; but he held six months longer, when wanting the money, he sold for $1.05 all round, making a difference of $290, to say nothing of the interest of the money for that time. No small item with which to swell the income list. Now the faculty of "right *selling*" would have saved him just that amount, with which he might have exercised the faculty of "right *spending*," but will now have to let it lie dormant. When you see a successful farmer, you see one who has made good sales, and seldom missed. To know when the iron is hot,—to know when to strike, is to be on the right road to success.

Columbus, O. F. C. W.

The "Grass Bug" and its Habits—Currant Worms.

EDS. CO. GENT.—The so-called "grass-bug" which R. N., Randolph, asks information about, is a species of frog-hopper or leaf-hopper. Without a more accurate description it would be impossible to decide which of them it is, but it belong to the *homopterous Hemiptera*, and the family CERCOPIDIDAE. The name of cuckoo-spittle is generally applied to them in the "Old Country."

The eggs are laid on the stalks of grass and the stems of willows, (where they may also frequently be found,) and when the young hatch they immediately pierce the stems with their beaks, and imbibe such quantities of sap that it oozes out from the pores of their bodies in the shape of froth. This froth serves to protect them from their enemies, as well as from the heat of the sun. When full grown they change to a chrysalis on the stalk on which they fed, and soon after become perfect insects.

In the perfect state they have rather an awkward, squat appearance, being short-bodied and broad. The wing-covers are almost horizontal. In striking contrast with their former slothful, slovenly, larva state, when they were scarcely capable of any motion save that which produced the "froth," they are now endowed with wonderful leaping faculties, being able to leap three hundred times their own length. As they pass the winter in the egg state, and the eggs are deposited on the grass, burning the stubble in the winter will naturally destroy them, and is the only way in which it can be done.

Allow me, Messrs. Editors, respectfully to make a suggestion here. I notice in your last number that you are rather severe on some of the members of the "Rochester Fruit-Growers' Society," for stating that the "currant-worm" in its perfect state is a fly. They may be right, and you are right also. The difficulty arises from applying such an indefinite and general term as "currant worm" to any single insect. If there were only one currant worm it might do, but besides the spotted yellow caterpillar which produces the drab colored miller, there is another currant worm —*a false caterpillar*—equally destructive, and stripping the trees just as thoroughly as does Mr. "Spotted Gentleman," which produces a fly or bee.

Chicago, Ill., July 22, 1865. CHARLES V. RILEY.

Let us Hear your Experience?

How easy to test many of the rapidly springing up theories current. For instance, on the great hobby of grapes—one man says his grapes, of the mildewing sorts too, running over green trees, never rot. Another that his vines, standing in an old ash bed never rot; or that since he put on a heavy dressing of leached ashes it has cured them. Another, that dusting the vines in bad mildewy weather with sulphur, cures infallibly.

Now there are 50 men, more or less, good credible witnesses, all interested in getting at the truth on these and one hundred other similar points, who are writing you, and now why not let them bear testimony as far as they are able? They are all equally interested, and would gladly have specifics established for all horticultural maladies. Why not, then, "communicate and do good?" Setting out, as all should, with the firm faith that health is the normal condition of all living things—such health and maturity as imply the formation of seed and fruit, by which capital process nature propagates her species—let all take hold together, and concentrate our efforts.

Another thing that the writer has before mentioned —why not, in the efforts at hybridizing, make a parent of some of our iron-sided, native grapes, to which any damage from cold or rot or mildew is unknown?

Another point claimed in trellis culture is that a good coping, say 18 inches wide, keeps off mildew and rot.

Means to ends—ends desirable, attainable: what has been may be—what ought to be will be, and blessed be the inventor and discoverer! Does the rot or curculio or apple worm, let your or your neighbor's plants and fruits alone? Why is it? Among so many, shall not the cause and remedy be discovered?

Bloomington, Illinois, July 24. F. K. PHŒNIX.

TIME TO CUT GRASS.

Some good articles have appeared in this paper on haying, showing that all grass should be cut when in bloom, before forming seed. But the notion is very prevalent that grass gains as much by filling up at bottom as it loses by maturing at top. In this section it is cut from time of bloom to the last of August. Most of it is ripe as grain, stalks woody, and seed shelled out. Hence the land is full of grass seed. Stock eat a great quantity of this straw in order to live, and it costs just as much to gather it as it does good hay. Why don't the political papers inform those readers that take no other journal? A. L. L.

List of Agricultural Exhibitions for 1865.

STATE, PROVINCIAL, &c.

American Institute,	New-York,	Sept. 12 to Oct. 19
California,	Sacramento,	Sept. 11.
Canada, Upper,	London,	Sept. 18, 23
Canada, Lower,	Montreal,	Sept. 26, 29
Illinois,	Chicago,	Sept. 4, 9
Indiana,	Fort Wayne,	Oct. 2, 7
Iowa,	Burlington,	Sept. 26, 29
Kentucky,	Louisville,	Sept. 12, 15
Michigan,	Adrian,	Sept. 19, 22
New-England,	Concord, N. H.,	Sept. 5, 8
New-York,	Utica,	Sept. 12, 15
Ohio,	Columbus,	Sept. 12, 15
Pennsylvania,	Williamsport,	Sept. 26, 29
Vermont,	White River Junction,	Sept. 27, 28
Wisconsin,	Janesville,	Sept. 25, 30

COUNTY AND TOWN—MAINE.

Cumberland,	Portland,	Sept. — —
Franklin,	Farmington,	Oct. 3, 5
Hancock,	Elsworth,	Sept. 26, 28
York,	Biddeford,	Oct. 10, 12

NEW-HAMPSHIRE.

Merrimack River,	Nashua,	Sept. 20, 21

VERMONT.

Chittenden,	Burlington,	Sept. 19, 21
Franklin,	Enosburgh Falls,	Sept. 20, 21
Rutland,	Rutland,	Sept. 27, 28

MASSACHUSETTS.

Barnstable,	Barnstable,	Oct. 3, 4
Bristol,	Taunton,	Oct. 3
Berkshire,	Pittsfield,	Oct. 3.
Essex,	Lawrence,	Sept. 26.
Franklin,	Greenfield,	Sept. 28.
Housatonic,	Great Barrington,	Sept. 27.
Hampshire,	Amherst,	Sept. 26.
Hampshire, Franklin &	Hampden—Northampton,	Oct. 5, 6
Hampden,	Springfield,	Oct. 3, 4
Hampden East,	Palmer,	Oct. 10.
Highland,	Middlefield,	Sept. 14.
Hoosic Valley,	North Adams,	Sept. 19.
Middlesex,	Concord,	Sept. 21.
Middlesex South,	Framingham,	Sept. 19.
Middlesex North,	Lowell,	Sept. 28.
Martha's Vineyard,	West Tisbury,	Oct. 17.
Nantucket,	Nantucket,	Sept. 26.
Norfolk,	Dedham,	Sept. 28.
Plymouth,	Bridgewater,	Oct. 5.
Worcester,	Worcester,	Sept. 21.
Worcester West,	Barre,	Sept. 28.
Worcester North,	Fitchburg,	Sept. 26.
Worcester South,	Sturbridge,	Oct. 5.
Worcester Southeast,	Milford,	Sept. 26.
Worcester Hort.,	Worcester,	Sept. 16, 22

RHODE ISLAND.

Aquidneck,	Middletown,	Aug. 29, 31

CONNECTICUT.

Fairfield,	Norwalk,	Sept. 27, 30

NEW YORK.

Albany and Rensse'r,	near Albany,	Sept. 19, 22
Broome,	Binghamton,	Oct. 3, 5
Cattaraugus,	Little Valley,	Sept. 26, 25
Camden,	Camden,	Sept. 25, 28
Cayuga,	Auburn,	Oct. 3, 8
Chautauqua,	Westfield,	Sept. 5, 7
Chenango,	Norwich,	Sept. 18, 20
Delhi,	Delhi,	Oct. 5, 6
Duchess,	Washington Hollow,	Sept. 26, 28
Essex,	Elizabethtown,	Sept. 21, 22
Gorham,	Reed's Corners,	Oct. 6.
Greene,	Cairo,	Sept. 19, 20
Genesee,	Batavia,	Sept. 20, 21
Jefferson,	Watertown,	Sept. 5, 7
Monroe,	Rochester,	Sept. 26, 28
Moriah,	Port Henry,	Sept. 28, 29
Manlius and Pompey,	Manlius,	Sept. 28, 29
Oneida,	Rome,	Sept. 25, 28
Oswego,	Mexico,	Sept. 19, 21
Otsego,	Cooperstown,	Oct. 3, 5
Ontario,	Canandaigua,	Sept. 20, 22
Oxford,	Oxford,	Sept. 25, 27
OrangeCo. Horse Show	Middletown,	Sept. 6, 7
Oswego Falls,	Oswego Falls,	Sept. 26, 28
Putnam,	Carmel,	Sept. 13, 15
Queens,	Flushing,	Oct. 4, 5
Rushville,	Rushville,	Sept 26, 27
Saratoga,	Saratoga Springs,	Sept. 5, 8
Schoharie,	Schoharie,	Oct. 4. 6
Suffolk,	Riverhead,	Sept. 27, 28
Susquehannah Valley,	Unadilla,	Sept. 21, 22
Tompkins,	Ithaca,	Oct. 27, 28
Ulster,	Kingston,	Sept. 20, 22
Vienna,	North Bay,	Sept. 27, 28
Washington,	Salem,	Spet. 27, 29

NEW-JERSEY.

Burlington,	Mt. Holley,	Oct. 3, 4
Morris,	——— ———,	Sept. 19, 21
Sussex,	Newton,	Sept. 26, 28

PENNSYLVANIA.

Adams,	Bendersville,	Sept. 19, 21
Berks,	Reading,	Oct. 3, 5
Bucks,	Newtown,	Sept. 26, 27
Chester,	West Chester,	Sept. 29, 30
Doylestown,	Doylestown,	Oct. 3, 5
East Pennsylvania,	Norristown,	Sept. 19, 21
Glenwood,	Glenwood,	Sept. 20, 27
Mt. Pleasant,	Hickory,	Sept. 25, 27
York,	York,	Oct. — —

OHIO.

Ashtabula,	Jefferson,	Oct. 3. 5
Athens,	Athens,	Sept. 27, 29
Butler,	Hamilton,	Oct, 3, 6
Belmont,	Belmont,	Sept. 19, 21
Clarke,	Springfield,	Sept. 5, 8
Delaware,	Delaware,	Sept. 26, 28
Franklin,	Columbus,	Sept. 6, 8
Fulton,	Ottokee,	Sept. 13, 15
Geauga,	Burton,	Sept. 19, 21
Greene,	Xenia,	Sept. 27, 29
Hancock,	Findlay,	Oct. 5, 7
Harrison,	Cadiz,	Oct. 4, 6
Highland,	Hillsboro,	Oct. 4, 6
Lake,	Painesville,	Sept. 27, 29
Madison,	London,	Sept. 7, 9
Marion,	Marion,	Sept. 20, 23
Morgan,	McConnellsville,	Oct. 3, 5
Morrow,	Mt. Gilead,	Oct. 3, 6
Portage,	Ravenna,	Sept. 20, 22
Putnam,	Ottawa,	Sept. 27, 29
Stark,	Canton,	Oct. 3, 6
Summit,	Akron,	Oct. 4, 6
Trumbull,	Warren,	Sept. 20, 22
Wayne,	Wooster,	Oct. 4, 6
Wyandot,	Upper Sandusky,	Sept. 27, 29
Warren,	Lebanon,	Sept. 20, 22

KENTUCKY.

Bourbon,	Paris,	Sept. 4, 8
Clarke,	Winchester,	Aug. 29.

INDIANA.

Dearborn,	Lawrenceburg,	Sept. 27.
Hendricks,	Danville,	Sept. 26, 29
Laporte,	Laporte,	Sept. 27, 29
Posey,	New Harmony,	Sept. 26, 29

MICHIGAN.

Berrien	Niles,	Sept. 26, 28
Calhoun,	Marshall,	Sept. 27, 29
Cass,	Cassapolis,	Sept. 27, 29
Genesee,	Flint,	Sept. 27, 29
Hillsdale,	Hillsdale,	Oct. 4, 6
Horse Show,	Kalamazoo,	Oct. 3, 6
Ionia,	Ionia,	Oct. 4, 5
Ingham,	Mason,	Sept. 27, 28
Kent,	Grand Rapids,	Sept. 28, 30
Livingston,	Howell,	Sept. 26, 28
Oakland,	Pontiac,	Oct. 4, 6
Ottawa,	Lamont,	Sept. 27, 29
St. Joseph,	Centerville,	Sept. 27, 29
Shiawassee,	Owosso,	Oct. 4, 6
Washtenaw,	Ann Arbor,	Oct. 4, 6

ILLINOIS.

Boone,	Belvidere,	Sept. 19, 21
Bureau,	Princeton,	Sept. 12, 14
Cass,	Virginia,	Aug. 22, 25
Coles,	Charleston,	Sept. 15, 18
DeKalb,	DeKalb,	Sept. 27, 29
DuPage,	Wheaton,	Sept. 13, 15
DeWitt,	Clinton,	Sept. 27, 29
Greene,	Carrolton,	Sept. 26, 30
Fulton,	Lewiston,	Sept. 13, 15
Henry,	Cambridge,	Sept. 13, 14
Jackson,	DeSoto,	Sept. 27, 29
Kendall,	Bristol,	Sept. 19, 21
Kankakee,	Kankakee,	Oct. 4, 6
Knox,	Knoxville,	Sept. 19, 22
Kane,	Geneva,	Sept. 27, 30
Lake,	Libertyville,	Sept. 19, 21
LaSalle,	Ottawa,	Sept. 26, 29
Macoupin,	Carlinville,	Sept. 3, 6
Macon,	Decatur,	Aug. 29, 31
Madison,	Edwardsville,	Aug. 29, Sept. 1.
Mercer,	Millersburg,	Sept. 26, 29
McDonough,	Macomb,	Sept. 27, 29
Montgomery,	Hillsboro,	Oct. 11, 13
Putnam,	Hennepin,	Sept. 19, 21
Richland,	Olney,	Sept. 28, 30
St. Clair,	Bellville,	Sept. 12, 15
Stephenson,	Freeport,	Sept. 26, 29
Stark,	Toulon,	Sept. 26, 29
Winnebago,	Rockford,	Sept. 19, 22
Warren,	Monmouth,	Sept. 19, 21
Whiteside,	Sterling,	Sept. 19, 22

IOWA.

Benton,	Vinton,	Sept. 13, 15
Cedar,	Tipton,	Sept. 13, 15
Clinton,	Lyons,	Sept. 12, 15
Dubuque,	Dubuque,	Sept. 26, 28
Guthrie,	Guthrie Center,	Sept. 14, 15
Jasper,	Newton,	Sept. 13, 15
Jones,	Anamosa,	Sept. 13, 15

Scott,	Davenport,	Sept. 15, 22
Van Buren,	Keosauqua,	Oct. 5, 6
CALIFORNIA.		
Contra Costa,	——— ———,	Sept. 19, 23
Northern District,	Marysvile,	Aug. 28, 30
San Joaquin,	——— ———,	Sept. 26, 29
CANADA WEST.		
So. Ontario,	Sept. 27, 28	
Peel,	Oct. 3, 4	
East York,	Oct. 5.	
Scarborough,	Oct. 6.	
North York,	Oct. 10, 11	
City of Toronto,	Oct. 19, 20	
Pickering,	Oct. 10.	
West York,	Oct. 11, 12	
Whitby,	Oct. 12.	
Whitchurch,	Oct. 13.	
Gore of Toronto,	Oct. 18.	
Lambton, Sarnia,	Oct. 5.	
East Durham—Port Hope,		Oct. 3, 4.
CANADA EAST.		
Sheffield—Waterloo,	Sept. 13	
St. Johns—St. Johns,	Sept 23	
Montcalm—St. Julien,	Sept. 21	
Bagot—St. Leboire,	Sept. 27	

THE TURKEY---ITS HISTORY, &c.

The turkey is the most recent, and except the hen, the most valuable of domestic birds. It was unknown before the discovery of America by Fernandez. It is indigenous to this country—a real Native American. It is one of those fowls that as yet are found in a wild as well as the domestic state. How long this may be is a mystery; probably not long, for as civilization and improvements advance they will doubtless share the same fate as the Indian and buffalo.

THE WILD TURKEY.

Buffon remarks, "as the turkey was unknown before the discovery of America, it has no name in the ancient language." The Spaniards called it *pavon de las Indias*—the peacock of the Indias—because its tail is like a peacock.

The natural habitat of the wild turkey extends from the northwestern territory of the United States to the Isthmus of Panama, south of which it is rarely found. In the States of Michigan, Ohio, Kentucky, Illinois and Indiana, they were more abundant than at present, but like the Indian and buffalo, they have been compelled to yield to the destructive ingenuity of the white settlers, often wantonly exercised, and seek refuge in the remotest parts of the interior.

Audubon observes: "The great size and beauty of the wild turkey, its value as a delicate and highly prized article of food; and the circumstance of its being the origin of the domestic race, render it one of the most interesting birds indigenous to the United States of America. The flesh has an excellent flavor, being more delicate, juicy and highly prized than that of the domestic turkey. The Indians value it so highly that they term it the white man's dish."

The plumage of the wild turkey is generally described as being compact, glossy, with metalic reflections; feathers double, as in other gallinaceous birds, generally oblong and truncated; tips of the feathers almost conceal the bronze color. The large quill coverts are of the same color as the back, but more bronzed with purple reflections. The lower part of the back and tail feathers are of the same color, undulating, barred, and minutely sprinkled with black, and having a broad blackish bar towards the tip, which is pale brown and minutely mottled; the under parts duller; breast of the same color as the back, the terminating black band not so broad; sides dark colored; abdomen and thighs brownish gray; under tail coverts blackish, glossed with brown, and at the tips bright reddish brown.

The plumage of the male is very brilliant; that of the female is not so brilliant or so beautiful. When srutting about with tail spread, displaying itself, this bird has a very stately and handsome appearance, and seems to be quite sensible of the admiration he excites.

Dr. Bachman says that "in a state of domestication the wild turkeys, though kept separate from tame individuals, lose the brilliancy of their plumage in the third generation, becoming plain brown, and having here and there white feathers." C. N. BEMENT.

TRAINING VINES.

I paid a visit the other day to one of the most successful and scientific grape-growers and wine-makers in this country, and was amazed to see how he trained his vines. Not a particle of that "system" so much extolled in the books was to be seen—wherever a branch chose to grow, it was allowed to grow, and when it got too long to hold itself up, a bean pole was driven down and the vine tied to it. I found that the owner of the vines scorned "geometrical forms," although he admitted that they were pretty to look at. It would not do to call in question such a (want of) system as produced the enormous crops I saw, and the delicious wine I tasted, but I could not help contrasting the vines before me with my pet vines at home, all trained in accordance with the precepts of Fuller or Phin; right and left arms of equal length, uprights equal in number, and the same distance apart, and I began to wonder whether this accuracy is necessary, or at least advantageous. Is there anything in the theory that the two sides of the vine must be "balanced" to secure an equal distribution of the sap, and that the spurs must be of the same number on each arm. Writers on the cultivation of the vine lay down rules for training vines in regular forms, as though it were of the very first importance; but while I admit that they—the regular forms, I mean,—are very agreeable to look at, I wish to ask if the majority of growers regard them as essential?

Mildew, of which we had actually none last year, has made its appearance here this month and the last week in July. Some seedlings from the Catawba suffered most, then the Delawares, while other grapes were but little affected. I have seen no mildew on Concords, Ionas, or Allen's Hybrid, and only specks of it on Israellas, Rogers' Hybrids, and Dianas; but I know a small vineyard a few miles from here, mostly Concords, badly affected with it. J. M. M., JR.

Walpole, Mass.

OXEN.—In a good working ox we want to see the following qualities: Let him have large nostrils, a long face, a bright hazel eye; which will indicate docility and intelligence; a hoof rather long and not turned outward very much, a straight back, a broad breast, wide gambrel, small tail, and horns of medium size. When you find such an ox as that, he will be a good worker.—*Exchange.*

THE LAUNDRY.

Furniture for the Wash-House.—There should be one or more large kettles. Copper is best, as it precludes the possibility of iron-mould.

Buckets and tubs with wooden handles are best, as careless washers often let clothes be ruined by coming in contact with iron hoops and handles of the vessels they use.

A stout bench on which to set the tub, to prevent the fatigue of stooping while washing.

Each washer should have a cup of soap and a grooved wash-board—those of zinc are best, because more springy, and consequently making the work of the washer easier.

There should be wings on opposite sides of the wash-house through which to stretch clothes-lines, or enough of clothes-horses, on which to hang clothes for drying in winter.

There should also be posts in some sunny grass spots for the same use in fair weather.

There should be always ready for use, barrels for soap, clothes-pins, starch canister, a kettle for making starch, clothes baskets, ironing table, skirt and bosom board, irons of several sizes, stout blankets and sheets, iron-stands and holders, not omitting soft old towels for wiping the irons.

There should be always ready a supply of firstrate soap, starch, gum arabic or spermaceti, indigo, and bee s wax, as likewise materials for any washing fluid you use. These things should be kept in some secure place, subject neither to waste or misplacement.

Washing.—The evening previous to washing, all the clothes should be gathered up and assorted; woolens, colored clothes, unbleached cottons, and linens and fine clothes into their separate bundles. Except woolens and colored clothes, all other kinds should be put to soak over night, the very dirty parts having soap rubbed on them. If you use a washing fluid, it is usually mixed in the soaking-water; if you use no wash mixture, the next morning wring out the clothes, and proceed to wash them carefully through two warm lathers; then boil them in clean lather briskly, but not longer than a half hour. Wash them out of boil, rinse through two waters. The last rinsing-water should have a delicate tinge of blue, likewise a small quantity of starch for all cottons or linens; reserve those you wish stiffer for the last, and mix more starch in the water. Shirt bosoms and collars, skirts, in short any thing you wish very stiff should be dipped in starch while dry. Swiss and other thin muslins and laces are dipped in starch while dry, and then clapped with the hands until in the right condition to iron.

Calicoes, brilliants, and lawns of white grounds, are washed like any other white material, omitting boiling, until the yellow tinge they acquire makes it absolutely necessary. Unbleached cottons and linens follow the white clothes, through the same waters, but must in no case be boiled or washed with them, as they continually discharge a portion of their color, and so discolor the white clothes.

In directing the preparations for washing fluids, we give the process employed with them, but colored clothes, in our experience, can be washed in none of them, without injury to the color.

Calicoes, colored lawns and colored cottons, and linens generally, are washed through two suds, and two rinsing waters, starch being used in the last, as all clothes look better and keep clean longer, if a little stiffened.

Many calicoes will spot if soap is rubbed on them; they should be washed in a lather, simply. A spoonful of ox-gall to a gallon of water, will set the colors of most any goods, soaked in it previous to washing. A teacup of ley in a bucket of water, will improve the color of black goods.

Nankeen should lay in ley awhile before being washed · the ley sets the color.

A strong, clean tea of common hay will preserve the color of those French linens so much used in summer by both sexes.

If the water in which potatoes are cooked is saved and boiled down, it stiffens black calicoes as well as starch, and saves them from the dusty and smeared look they so often have.

Vinegar in the rinsing water, for pink or green calicoes, will brighten them. Pearlash answers the same end for purples and blue.

Flannels should be washed through two suds and one rinsing water; each water should be as hot as the hand can bear, unless you wish to thicken the flannel. Flannels washed in luke-warm water, will soon become like fulled cloth. Colored and white flannels must be washed separately; and by no means wash after cotton or linen, as the lint from these goods adheres to the flannel. There should be a little blue in the rinsing water for white flannel. Allow your flannels to freeze after washing in winter; it bleaches them.

A HOUSEKEEPER.

LARGE HIVES---ITALIAN BEES.

Messrs. Tucker & Son—I have progress to report in the Bee line. Having obtained the idea from my experience, that Italian bees need more room than the Black, last spring I made a hive, mainly after the Langstroth pattern, but two frames wider—honey-box of same size, holding 11 frames—lower part, 12 frames—no partition between the two. In the fore part of May I put in an old stock, having about 8½ combs. Now the 12 lower frames are full, and the surplus honey-box of 11 frames is almost full. There is probably more than 100 lbs. of honey stored in about seven weeks. They did not swarm.

From another swarm which has declined to work in boxes for three seasons, I removed the honey-board, and removed the bottoms of my boxes and sides so as to be one box across the hive—sat on the frames, guide-combs being first stuck in the boxes at the proper distance for combs.

In this way I put on 12 boxes, forming three while on the hive. They are all about full now, besides a good swarm from the old stock.

I find Italians less inclined to work in small boxes than the Black, but they will store a larger amount of honey in large receptacles. Joel Curtis.

New-Britain, Conn., July 11, 1865.

TRANSFERRING BEES AND HONEY.

W. H., Carrolton, Ky., in No. 3 of present vol. of your paper, inquires how he shall get the bees and honey out of his box? Take it in the middle of the day, when many of the bees are off at work; smoke the bees with tobacco, but not too hard. Then set the old hive bottom side up, about twenty feet in front of the old stand; set a box with the bottom all open on top of the hive—if possible have it the same size—stop all cracks or holes where a bee could get out. Before proceeding to work, set a box on the old stand for the returning workers to go into. Now with a hammer or stick in each hand, commence drumming on the old hive for about a minute, then wait several minutes for the bees to fill with honey, after which proceed to drumming rather lively, but not hard enough to detach the combs inside. Drum about twenty minutes, then take off your top box, which will generally contain most of the bees by this time. If this is the box you intend to keep your bees in, set it on the old stand; be *very* careful not to crush any bees, for if you kill the queen your (luck) will vanish. If not intending to keep the bees in this box, set your new hive on the old stand, raise it in front ½ an inch, then turn your bees out close to the hive, and poke them with a thin stick until the bees are collected inside. Let an assistant do this while you return to the old hive; if many

bees are left, stir them up gently, put on the box and drum a few minutes more; if there are not many bees left, brush out the few remaining into a pan, and carry them to the new hive. It would be well if there are many bees in and around your yard, to carry the old hive to a building now, and with hammer and chisel rip off a side of your hive, cut out the comb, and brush off and pick up all stray bees, and carry to the new hive. If you use an old-fashioned box hive the job is done, excepting to see that the bees all cluster in the hive, and set it down at night. But to have a sure success you must have a Langstroth or other movable framed hive, and with a partition through the centre of each frame, you tie in with strings all pieces of nice *worker* comb containing brood, or honey mixed with bee-bread and unfit to eat. With three or four frames filled with worker comb, and as many more empty frames placed alternately, first a full frame, then an empty one, and plenty of buckwheat or other fall honey-producing flowers, you will have a colony in good shape to winter, (with not so much honey that they starve to death.) But if you want a tip-top honey-producing colony next season, in the course of a few weeks find your black queen and kill it. In one week cut out queen cells and introduce a pure blood Italian queen procured from a reliable source. Y. R. S.

Feeding and Care of Poultry.

Brood Coops are usually made by nailing boards about two feet long together, so as to form a triangle about three feet deep; the back is boarded up closely, and laths nailed in front wide enough apart to permit the chickens to run in and out.

Feed Coops are long boxes with slatted sides, the spaces wide enough to permit the free ingress and egress of the young, who are thus protected from the voracity of the old fowls. These coops should have shallow troughs in them for food and water, and be moved every few days to a fresh clean place.

Coops for fattening fowls for the table should be kept clean, and always supplied with water, gravel and a box of dry dust or ashes. No fowls will thrive without these provisions. The food should be varied, and of the best quality. If the grain is cooked and some meat allowed, it will greatly increase their thrift.

Food.—In summer we only allow food enough to the grown fowls to habituate them to the yard. But the feed coops of the young should be liberally supplied with soft bread, cooked vegetables, scraps of meat finely minced, curd, milk, melons, anything which observation teaches us they seek. The troughs should be washed out daily and supplied with clean fresh water. It is a good plan to deposit for the benefit of your ducklings, in some corner of the yard, an occasional wheelbarrow of stable manure, or tub of soap-suds, anything that will breed a good supply of insects. In winter all fowls should have access to abundant supplies of food and water. Grain of all kinds, and for hens every day or two, animal food strongly peppered. Without this and lime you need not expect your supply of eggs. A favorite plan of winter feeding fowls with us, has been to scatter oats, straw and all, over our poultry-yard. It makes a comfortable temporary pavement; the hens pick among it as cheerily as if it was summer, and the straw in the spring, and sweepings from our poultry-houses, make a compost for any root crop, that we have never seen equalled.

Nest Eggs.—To have a supply of these, indestructible to heat or cold, just empty some eggs as you need them, through as small an aperture as possible; mix up with water, to the consistence of cream, some pulverized plaster; fill up the shells brimming full; when they have hardened, if you choose to peel them, you will find them perfect; and if you think your Brahmas will be fastidious about color, a little annatto mixed in will render the illusion perfect. A HOUSEKEEPER.

Hardiness of Pear Trees.

It has been widely confirmed by observation that in the same districts of country, and under equal degrees of severity of cold, the same varieties of the pear have been killed in some instances and have entirely escaped in others. Novices have been puzzled to account for contradictory results of this kind—but they are easily explained by an examination of the soil, cultivation or other influences which increase or retard growth, or variously favor the ripening or perfect maturity of the wood. A contemporary states that last winter several hundred fine, healthy looking standard pear trees were destroyed by the severe cold, while dwarfs of the same age, variety and exposure, in adjoining rows received no injury. There is no doubt that if the owner had examined the growth he would have found that the standards had continued growing much later than the dwarfs; that the wood was more succulent and consequently more liable to injury. We have known instances just the reverse of this—where standards had remained uninjured while dwarfs were killed. We mention these facts to show the importance of caution in arriving at conclusions, and the necessity of observing all the influences which bear upon them. For this reason a large number of observations is required to establish the degree of hardiness of any one variety.

Result of Subsoiling, Draining, etc.

MESSRS. EDITORS—I purchased my place in 1859, and that year I cut from 3 14-15ths acres of ground 1¼ tons poor hay, and the appearance of the land was not favorable to good crops of any kind. I was told that it would not do to break it up, as it being a sidehill and clayey loam, it would slide badly. Notwithstanding, that fall I subsoiled it, and sowed it with oats in the spring. In the autumn subsoiled again and next year planted with corn; had the largest in the county. I planted 14-15ths acres with fruit trees, leaving just 3 acres, which I sowed with timothy in April as soon as the snow was off. It produced a good crop of weeds; but in 1863 it put up timothy and *clover* strong, and I cut 11 tons—in 1864, 12 tons—in 1865, 13¼ tons.

I seeded down the 14-15ths of an acre October 14, 1863, after a crop of potatoes. It promised well; the drouth injured it, but I cut over two tons of as clean timothy as ever grew, and this year 3¾ tons, and I should be afraid to to tell the height of some of it—in all 17 tons, where I got 1¼ tons.

Another piece adjoining, harder and more unpromising, which would not pasture a calf, (1 1-10th acres,) I underdrained, then subsoiled, took off—1st. Corn—2d. Potatoes—3d. Oats, (the best crops in this region,) and the 22d of last September, sowed with timothy and this year (*first* crop) cut 6,200 pounds *clean* hay (about 3 tons to the acre.)

The piece sowed in the spring was *weeds* for the first crop, and foul since. The second piece was sowed later than I like, but a good *first* crop, and *clean*. The third piece was about right every way. I think, sow grass seed in the fall.

Bright Bank, Ulster Co., July 28, 1865. J. B. S.

N. B.—I used some manure

Gas Lime---its Application to Soils, &c.

EDS. CO. GENT.—Mr. STEPHEN HAYWARD, Jr., of Plainfield, Mass., writes me a letter referring to the communication I sent you, published in CO. GENT. of July 27, in reference to GAS LIME. He asks the following questions:

1. "How large a quantity is it necessary to apply?"

2. "What is the most suitable season for its application?"

3. "Will it be likely to injure young apple trees, just coming into bearing, if applied in a sufficient quantity to kill the quack grass?"

As my article of the 27th was written for the CO. GENT., I have concluded to answer him through your columns rather than in my own paper.

Mr. Hayward gives no clue to the character of his soil, nor as to whether he desires the application for the benefit of grass or other crops.

I should mislead Mr. Hayward by advising him to apply a maximum quantity of any mineral fertilizer. Gas lime may or may not be of service to his soil. The results obtained from the application of calcareous manures are various on different soils. In my article of the 27th I gave the effect produced by an application of gas lime on grass lands near Rochester, applied at the rate of 30 bushels of the lime per acre—it doubled the crop—and I suggested that farmers try it on their lands, moderately at first, and watch its effect. I would advise Mr. H. to mark off three small pieces of land and apply the lime at the rate of 10, 20 and 30 bushels per acre on these pieces respectively. Let it be applied this fall on grass, and again on three other pieces in spring. In this way he will satisfy himself of its value without any great risk of injury, and if he will communicate the result of his experiments to some agricultural paper he will be doing service to others as well as himself.

As to its application about young fruit trees in sufficient quantity to kill quack or couch grass, I should hesitate to use it on an extended scale without testing its character by experiment.

Mr. B. B. French in a communication from Washington to one of the New England papers, states that he applied in the spring a cart load of gas lime about a plum tree, for the purpose of saving the plums from attacks of the curculio. It had the desired effect, the tree bearing abundantly.

The second season he made another application with the same marked result. He speaks of no injury to the tree from the application. Here is the fact in one man's experience, but farmers are not expected to apply this rule to the letter and dose every plum tree on their premises. It is a suggestion by which experiments may be made, modifying here and there to meet the case in hand.

Manufacturers of gas for illumination purify the gas by the use of wet lime, and these impurities are absorbed by the lime. Professor Johnson speaking of refuse lime of gas-works says:

"This refuse lime consists of a mixture of carbonate of lime with a variable quantity of gypsum and other salts of lime containing sulphur, and a little coal tar and free sulphur, the whole colored usually by a little Prussian blue. The following table exhibits the composition of two gas limes which have been analyzed in my laboratory, the one from the Edinburgh gas-works, and the other from the gas-works in Bricklane, London. The first two columns show what they *were* when sent to me, the second two what they *will become* after long exposure to the air, after being made into compost, or after being thoroughly, and for a length of time, incorporated with the soil:

COMPOSITION OF GAS LIME.

	As they are.		As they will become.	
	Edinburgh.	London.	Edin.	London.
Water and coal tar,.....	12.91	9.59	12.91	9.59
Carbonate of lime,.....	69.04	58.88	67.39	56.41
Hydrate of lime, (caustic.)	2.49	5.92	——	——
Sulphate of lime, (gypsum)	7.33	2.77	16.45	29.32
Sulphite and hyposulphite of lime,.....	2.28	14.89	——	——
Sulphuret of calcium, ...	0.20	0.36	——	——
Sulphur,.....	1.10	0.92	——	——
Prussian blue, ...	2.70	1.80	2.70	1.80
Alumina & oxide of iron,.	——	3.40	——	3.40
Insoluble matter (sand, &c)	0.64	1.29	0.64	1.29
	98.69	99.82	100.09	101.81

"This table shows that these gas-limes differ much in composition, especially in the proportions of sulphur or of the acids of sulphur they contain. This arises chiefly from the kind of coal which is employed in the manufacture of gas in different works. In Scotland different varieties of cannel coal are very extensively employed. In London, the better kinds of Newcastle coal are chiefly used, all of which either contain or give off more sulphur than the best cannel coals of Scotland.

"The most marked difference between the two samples here analyzed, is in the compounds called *sulphite* and *hyposulphite* of lime. The latter of these substances dissolves readily in water, and its presence in such very different proportions satisfactorily accounts for the very different effects which here followed from the application of gas lime to the land in different districts. The rains dissolve the hyposulphite and the sulphuret, and carry them down in too great quantity to the roots of the young corn, and hence the complaints of some, that gas lime has killed their wheat, while others have found, when applied as a top-dressing in a similar way, that it generally improved their crops of corn.

"Unless its composition be satisfactorily ascertained, therefore—unless, for example, it be found that aterw dissolves very little of it—there will always be a degree of risk in applying it directly to the land while any corn crop is growing. There may not be the same danger in putting it between the turnip or potato drills, and afterwards ridging up the lands in the way that quick lime is applied in many districts. To fallow land, however, to land which it is intended to reclaim, and especially to mossy land, the Scotch varieties, at least, may be applied directly, with safety and with great benefit. In the neighborhood of Paisley it is in constant demand for the improved moss lands, and sells at about 1*s.* 6*d.* a cart.

"But those varieties which contain the largest quantity of the soluble hyposulphite of lime, also form at least the largest quantity of gypsum. Thus the Edinburgh lime analyzed would never come to contain more than 17 per cent., but the London lime might eventually contain as much as 30 per cent. of gypsum. This suggests the propriety, therefore, of laying it on and harrowing it slightly in, some months before any crop is sown—in the spring, for instance, before the turnip sowing—or of making it into composts, perhaps the best and safest method of all."

Little Falls, Aug. 10th, 1865. X. A. WILLARD.

Horse-Hoe.—A Connecticut correspondent writes us as follows:—"The horse-hoe of D. M. Dunham & Co., Bangor, Maine, which you helped me to get, is a grand implement. A field of mine in corn, which last year occupied two men and a plow four days, was this year done up by the horse-hoe and two men in two days, and thoroughly well done."

The Kittatinny Blackberry.

Being unable to accept an invitation from E. WILLIAMS of Montclair, N. J., to accompany a party into Sussex Co., for the purpose of examining the new Kittatinny Blackberry plantations, CHAS. DOWNING, who was present, has kindly furnished the following facts in relation to it:

"We visited several gardens where it was more or less grown—in one I should think to the extent of half an acre—(but only one with good cultivation.) As to vigor and productiveness, I did not perceive any difference, except the leaves were a little more serrated — size of berry fully equal, but rather larger—decidedly sweeter, and an acquisition to this class of fruits.

"In one of the gardens the Kittatinny and New Rochelle were growing side by side, and apparently of the same age, so that we had a fair opportunity to compare and examine them fully, and I consider the Kittatinny the best blackberry I have yet seen.

"It is said to have been found in the town of Hope, New Jersey, near the base of the Kittatinny mountains; hence its name."

C. DOWNING adds—"I wish you had been here to have seen them on the bushes—the quantity was immense, considering the poor cultivation they had, or rather no cultivation."

E. WILLIAMS kindly sent us a box of this blackberry, but although they retained their form, they had lost most of their flavor by fermentation. Enough, however, remained to show that they are sweeter than the Rochelle. In measurement they averaged a full inch in length, and five-eights of an inch in diameter; some were a little larger. This is fully equal in size to the Rochelle under common good cultivation. So far as we can imperfectly judge, we should regard this variety as intermediate between the Dorchester and the Rochelle, perhaps larger and more productive than either.

THE APPLE-WORM

This insect is becoming truly formidable, and a large share of the small crop of apples of the present year is spoiled by its injuries. We have already noticed the new contrivance of Dr. Trimble for destroying it by means of hay ropes passed around the trunks of the trees at midsummer, under which these insects pass to the pupa state, and are then easily killed. This remedy is no doubt useful as far as it goes, but we question if it will prove anything more than a useful auxiliary. Swine in sufficient numbers to eat all the fallen fruit from the moment it begins to drop until it approaches full maturity, will doubtless prove very effectual. But those who have large orchards will find it difficult to assemble swine enough to do the entire work in a complete manner. It may be necessary, therefore, to resort to sheep—the only objection to which, is their propensity to bark the trees; encircling them with board boxes, or rolls of basswood bark peeled from saw-logs will be easier and better than to allow the insects to ruin the crop. Sheep soon become fond of half-grown apples, and eat them readily. No orchard should be permitted to run to grass until the trees have attained good size; and even then nothing of larger growth than the short herbage of sheep pastures. The top-dressing of manure which these animals will give the orchard will prove another advantage. An additional scattering of manure from the yard in autumn will make up the deficiency of growth occasioned by a covering of turf.

PRODUCTIVE PEARS.

The present season affording but a small crop of pears, is the time to acquire information in relation to those which are most reliable for their productiveness. It would therefore assist this object if our pear growing correspondents would furnish lists of those which are bearing heavily. As a small contribution in this direction, we may state that the following varieties are bearing full crops on our grounds, viz., Rostiezer, Belle Lucrative, Jones' Seedling, Baron de Mello, Bartlett, Beurre d'Amalis, and Vicar of Winkfield. We have scarcely met with a tree of the last named sort that is not bearing well. Louise Bonne of Jersey, so widely famed for its productiveness, has but a moderate crop this year.

BEANS AS A RENOVATING CROP.

MESSRS. TUCKER & SON—Articles and suggestions on the general subject of renovating and enriching exhausted, mismanaged, worn out and naturally thin soils, are always in order, because in some respects unfortunately perhaps, but in others, as for instance from the fact that men generally do, and probably always will, require something of the nature of a spur to engage them in their duties—not so unfortunate after all, because, I repeat, there is always a large quantity and proportion of the soils under cultivation that require to be brought into a higher state of fertility before they can possibly be profitable to till.

Some years ago my attention was drawn to beans pretty closely in consequence of sheep being so partial to them, and for six or seven years I have grown them, not so much for direct profit, but chiefly for the same reason that clover is grown, and manure composted and applied, for the sake of the indirect but large aggregate advantages, in one way or another, attending their production. It has been shown to a demonstration repeatedly that clover has an immense mass of root matter, which is left in the ground, supplying it with much organic matter in this way, besides letting in the air, all of which is freely admitted. But there is one disadvantage attending the growing of clover, as compared with corn or beans, which is that the ground is *not worked* while the crop is growing. And though clover is unquestionably an excellent rotation alternative crop, there are yet other disadvantages attending its production that I shall explain at another time, when I shall expect to see your eminently practical correspondent, F. of Orleans Co., surprised at my audacity in undervaluing his favorite renovating crop.

I was proceeding to say that as compared with clover, corn and beans admitted of the ground being well worked while they are growing, which, with clover, is not the case. It is not in question here that farmers have not enough to do, or whether they want what Wm. Cobbett called potatoes—a lazy crop; but the question is how can the fertility and productiveness of the soil be most profitably and rapidly increased without any greater facilities than such as the generality of farmers possess and can apply if they will. I think and believe my experience warrants the conclusion that even on light soils, if the proper crops be adopted, working is to a considerable extent the equivalent of manure. Lawes & Gilbert's experiments have shown this on strong soils, and the Lois Weedon experiments have justified Tull's theory that it is true as to heavy soils. My success in raising wheat after beans has convinced me that the same principle will hold good as to the medium and light loams.

Five years ago we had a wet season throughout the month of May—so wet was it that the blackbirds took up several acres of our corn, in spite of our best efforts to save it. This ground had borne two crops of wheat and was fall plowed and lightly surfaced manured in the winter for the corn, but after the latter was up the blackbirds took the whole of it, or thereabout, on one side of the field; the other side, about four acres, having about half a stand, being left and worked. On the half of the piece where the corn was destroyed we planted small white beans, furrowing out with a one horse plow, and dropping in bunches. Corn and beans were cultivated alike, with a Sayres' cultivator, through the season. The soil on which the beans grew or the upper part of it, was a little lighter than that bearing the half crop of corn. On the west side of the same field was a piece of new land bearing its second crop only, wheat of course. The whole field, about ten acres, was fall plowed after the beans, corn and wheat were off, and a surface manuring applied on the three acres of new ground, after which in the spring, the whole piece was sown to Fife wheat. Now for the difference in results. On the corn ground there was a fair crop of wheat of medium quality, about 18 bushels to the acre. On the other side, where the ground was manured and newer, there was a crop of 20 bushels, or a little over, per acre. (I judge by counting the bundles, made of the same size, and comparing numbers.) But on the piece of bean ground between the other two pieces of wheat, there was the heaviest, finest piece of wheat in the vicinity, averaging 26 bushels per acre at least, and what I several times took a special walk to notice was this—during the whole, but particularly the latter part of the growing season the wheat after beans was by several shades a darker green than either that after corn or the other piece after manuring. The field where this experiment took place is in sight, as I write.

Another experiment of the same kind, but varying in conditions, will go to support the same view. It is this: our present orchard, about 3 acres, was so poor when I bought the place, four years ago, that I did not raise wheat enough (it was too far away, and I had so much to do, I could not plant it to hoed crops, which only should be grown in orchards, I am aware) to pay for harvesting. The next year it was not cultivated, but bore a fine crop of weeds, which were twice mowed down. For two years previous to the present we have grown fair crops of beans on it, working them precisely as we do corn, with the cultivator. On two acres of this thin soil (which jets out into the midst of the field, into which it must be thrown and a young orchard raised in a suitable place) I sowed wheat the present season. The ground was spring plowed, and the wheat not planted over early. Yet on this sandy loam, after two crops of beans, but without any manure, there is a very good crop of wheat for such land, better than adjoining land after corn even. It is safe to anticipate 18 bushels, and probably 20, of spring wheat per acre.

I attribute such results to the working of the ground, for although it be the fact that there is very little vegetable or organic matter in such soils, it is also true that beans, as with clover, do not require much of such matter *in the soil*, as both draw a large proportion of their organic or vegetable matter from the atmosphere in contact. But mineral matter—and who can define the distinction, considering the allotropic properties of both between approximating conditions of vegetable and mineral substances—is also organic matter, though it may not be transposable to a gaseous form, and the working of thin soils with a crop of beans to shade the surface, causes mineral abrasion and disintegration of the primary structure of the ground, exposing much of its substances to far more rapid chemical changes than could take place were it would not worked.

This is my explanation of the great success of wheat after corn, for we must admit that much mineral matter is required in the straw and the seed together, by a full crop.

If we are met here with the query—but where is your vegetable matter, which clover supplies, to come from? the answer is, we want good crops of *grain*—if with a good crop of straw, as this will serve to make manure, all the better, as some may think, but if, as in my experience, we can get full crops of grain with only short, but stiff straw, the grain yield will be satisfactory, and short, stiff straw is quite as safe, or more so, as against lodging, and the loss of grain resulting from it, both frequently incident to wheat with large, rank growing straw. Short or medium straw is too, quite as pleasant and economical to handle.

As a practical question there are other incidental advantages in growing beans, as a renovating crop, for they are a directly paying crop. For there is nothing so good as an alterative feed of beans to produce wool that won't pull, and the haulm is relished equally with the beans by sheep, and beans furnish two varieties or changes of feed, which sheep so much require. And with the simple exception of pulling, which is a short "job," as President Lincoln would have called it, beans are a pleasant crop to manipulate.

When land in beans is at a distance from the homestead, I have several times drawn them home at pulling time. Here they can be stacked and piled in a convenient place, and remain until frosty weather without being in the way before being thrashed. The beans do not shell in drawing at pulling time, and if they are heavy drawing, the drawing of stakes twice is saved, as well as some beans, as they shell if left to draw when dry. When drawn in this way the crop is out of the way, and the ground can be fall plowed in good season, ready for wheat, either fall or spring, a satisfactory crop of which may be anticipated if the beans are frequently cultivated and no weeds raised. Beans will be found a *sure*, if not a high priced crop, and the wheat crop following will make up any pecuniary deficiency incident to its predecessor.

Green Lake Co., Wis. J. W. CLARKE.

A NEW HEDGE PLANT.

EDS. CO. GENTLEMAN—I send with this for your inspection, a package of specimens of the Silver Thorn. It seems to me everything that is desirable in a hedge plant, and I should be pleased, should you chance to come this way, to have you stop and examine the growing hedge.

The best plants so far discovered for making a quick and effective hedge, are undoubtedly the Osage Orange and Honey Locust; but being naturally trees, they require some knowledge and judgment as to how and when to prune to overcome this tree-growing tendency, and at the same time have a hedge, thick and bushy from apex to base. Even with this knowledge to gain and labor to bestow, a hedge of Osage Orange or Honey Locust costs but one third to plant and maintain in good order, than does the best post and rail fence ever made, and never has the "get over me if you please" expression, that the latter always has.

It has always been felt, however, that if anything *not a tree naturally*, could be substituted for Osage Orange or Honey Locust, it would be a great gain. Hence Buckthorn, Berberry, Pyrus japonica, and other shrubs have been tried: but these *grow too slow*; and hence fast growing trees, with some labor to keep them as hedges, have been found preferable to slow growing shrubs without any labor at all.

This *Silver Thorn* seems to be just the medium between these extremes. About fifteen feet seems to be the average height of full grown plants, and this it will attain in three or four years. It commences to seed at that time, which it produces in abundance, which is one of the first steps towards getting a cheap hedge plant. Seeds sown in the fall or very early in spring, grow to a good size before next fall, and set out make a complete hedge evidently in as short a time as the tree-growing plants. The branches are spiry, and so stiff that even without the spires it would make a good hedge plant. It is naturally so bushy, that even should a man be disposed to neglect trimming, it will probably make a protection for all which neither Osage Orange or Locust will.

The roots of the thorn are fibrous, and will not probably tempt hungry mice or gophers to prey upon them as more fleshy roots will.

But one of the greatest charms to me of this hedge plant is in the beautiful silvery stems and foliage, and the delicious fragrance of its blossoms is quite equal to the Hawthorn in this respect—of the first you can judge a little from the specimens sent, but of the latter you will have to come to see me in June to judge. I en close a few seeds for you to experiment with.

Botanically the plant is *Eleagnus parvifolia*, a native of the Himalayas, and will probably prove entirely hardy except at very extreme points. The past six winters here near Philadelphia, have not injured the weakest shoot. THOS. MEEHAN.

Germantown Nurseries, Pa., Aug. 8, 1865.

MILDEW OF THE GRAPE.

The following interesting memoranda has been just received from our friend and correspondent CHAS. DOWNING:

"You ask me about Dr. Grant's grapes. Both are doing well and making a fine show of fruit, although the Iona did not set the fruit so perfect as formerly; (this is the case with several sorts that never missed before.) Israella has fine large compact bunches, and is the most promising this season so far of all the newer sorts.

"I regret to say that mildew on the leaves commenced some 10 or 12 days since, and is spreading rapidly. Norton's Virginia Seedling has lost nearly all its foliage; heretofore this has been very free from it, and one of the hardiest, always ripening its fruit without rot or mildew. Rogers' No. 1, 5, and 9 are badly mildewed, both fruit and foliage; the other Nos. are affected more or less on the foliage; fruit still free. The old Alexander, which has always been hardy and free from it, is one of the worst mildewed ones on the fruit—leaves also badly.

"The last to be attacked by the mildew were Iona, Israella, Hartford Prolifi, Concord and Delaware. Catawba, Diana, Concord and ToKalon have commenced rotting, but not very much as yet. One person having a small vineyard of Concords, about a mile from here, has lost nearly his whole crop by rot."

LETTERS FROM EUROPE---III.

The Rhine, July 4th, 1865.

Messrs. Editors—I do not know that I can keep "the day we celebrate" in a better manner away from home, than by writing a letter to that most patriotic individual, the Country Gentleman. It gives me much pleasure to state in this connection, that I had the honor of meeting in the Zoological Garden at Cologne, the American Eagle, or rather a pair of the real bald-headed species, and no mistake about them. Whether the gratification was mutual or not, I had no means of ascertaining, as the trifling obstacle of a strongly barred cage prevented any very near demonstrations of friendship.

On leaving Cologne I proceeded to Bonn, where I called on Prof. Dr. Freytag, the administrator of the Royal Agricultural Academy at Poppelsdorf, near Bonn, to whom I had a letter of introduction from Dr. Hartstein, the director of the institution. I was very kindly received, and Prof. Freytag took much pains in showing me the lecture-room, museum, barns, and other buildings; and also went over the experimental farm, which, with the help of a map brought along by one of the students, and on which the various experiments being made were carefully designated, was very interesting. Among other things I noticed Hoibrunk's system of Air-Drainage in full blast, though no decisive results had as yet been arrived at. It was really a great satisfaction to see an experimental farm actually in operation, for in America, though there has been so much talk on the subject, yet one of the right sort has never yet been established, owing probably to our not knowing exactly what we wanted. The fact is, young men who wish to become teachers in agricultural colleges at home, must come over and study in the best institutions of the kind abroad, before we can accomplish much in that line. This is the course pursued by many professors in our other colleges, with great advantage to themselves and their students. There is no reason why we should not avail ourselves of all the information we can get from Europe, or any other part of the world. They are ahead of us here in two things especially, and those are, edcucation, and police or municipal arrangements. This academy at Poppelsdorf is one of the best in Germany, and is said to be superior in discipline to the one at Hohenheim. The director, Dr. Hartstein, is a very distinguished man, and was one of the principal advisers in getting up and conducting the great International Exhibition at Cologne. The academy, or college as we would call it, was first opened in May, 1847. I send you a copy of the rules adopted by the Prussian government for its management. The following account I have translated from Mentzel and Lengerke's Agricultural Calendar for 1865, as I think it will prove interesting to your readers:

I. Course of Study and Teachers

1. History and Literature of Agriculture, Science of Agricultural Management, Taxation of Property, General and Special Field and Meadow Culture, Knowledge of Soils and Exercises in Valuation: *Director Hartstein.*

2. Breeding of Cattle, Knowledge of Agricultural Implements and Machines, Drainage of Fields, Book-Keeping and Practical Demonstrations: *Second Professional Administrator, Dr. Kramer.*

3. Science of Cultivating and Managing Forests, Hunting and Fishing Affairs, Repertory of Natural Science: *Dr. Bonhausen.*

4. Garden, Fruit, and Wine Culture: *Garden-Inspector Sinning.*

5. Veterinary Science, Regimen of Domestic Animals, Breeding and Knowledge of Horses: *Depart. Veterinary Surgeon Schell.*

6. Botany and Zoology: *Prof. Dr. Sachs.*

7. Chemistry, Physics, Agricultural Technology, and Practical Chemical Experiments: *Prof. Dr. Freytag.*

8. Mineralogy and Geognosy: *Dr. Riese.*

9. Mathematics, Drawing, Rural Architecture, Exercises in Surveying and Levelling: *Architect Schubert.*

10. Legislation Respecting the Cultivation of Land and Agricultural Common Law: *Prof. Dr. Achenbach.*

11. Science of National Economy: *Prof. Dr. Kaufmann.*

II. General Remarks.

The lectures embrace a two years' course of study in four Semesters, which exactly correspond with the beginning and duration of those of the University of Bonn. As auxiliary means of instruction, besides the estates of Poppelsdorf and Annaberg, the abundant collections and costly apparatus, which belong partly to the University of Bonn and partly to the Academy, are at the command of the latter. In addition should be mentioned, the economical and botanical gardens, tree nurseries, a vineyard, experimental fields, and an agricultural experimental station, opened in the spring of 1857, and connected with the institution, in which, besides the general corps of instructors, a special experimental chemist is engaged. Particularly instructive is the estate of Annaberg, which belongs to the Academy, and which is arranged for extensive operations in husbandry. The necessary improvements, the laying out of a nursery of trees there, as well as the drainage of the fields in process of execution, offer an opportunity to acquaint oneself with these branches, and besides, together with agriculture proper, the culture of hops and tobacco is also carried on.

All the students received into the Institution must be matriculated at the University of Bonn, and enroll themselves in the Philosophical Faculty, whereby they acquire the academical citizenship, and are subject to the discipline and laws of the University. An exception from the obligation of matriculating oneself only happens to those who have passed their thirtieth year. Persons of this age are allowed to be admitted to matriculation only after a previous agreement. Those received in such a way are to be regarded as actual members of the establishment. In addition, with special permission of the Ministry of Agriculture, the attendance of individuals at the Institution for a short time, without the duty of matriculation, may be allowed. These appear as Hospitants, or temporary students, and have to pay the fees for the separate lectures delivered to them at the option of the Director. Admittance to the Institution may be had at the beginning of every Semester. Those received pay, in addition to the matriculation fee of 6 thalers due the University, entrance money and a fee of 40 thalers for 1st, 30 thalers for the 2d, 20 thalers for the 3d, and 10 thalers for the 4th Semester; subscribers for the full year's course also pay 100 thalers.* Entire or partial remission of the fees can only take place in individual authenticated cases of

*A Prussian thaler is about 70 cents our money.

special poverty, and if the applicant during a half-year's residence at the Institution, has shown himself worthy of this distinction by industry and moral conduct Further, a whole or two half free scholarships may be granted forever to ten academicians paying the entire fee. Those leaving receive testimonials of character, and those who submit to a special examination also a certificate of their acquirements. The entire cost of the residence, including fees, may be reckoned in proportion to the demands or wants of the students, from 300 to 500 thalers a year. A full account of the arrangements of the Academy is given in a pamphlet, published by A. Marcus, at Bonn in 1864, entitled "The Agricultural Academy at Poppelsdorf," written by the the director, Dr. Hartstein.

I learn from a copy of the Annual Report of the Royal Board of Agriculture for 1864, which was very kindly presented to me, while in Berlin, by the chairman, Herr Wehrmann, and to which I shall again refer, that the number of students in attendance at Poppelsdorf, during the summer Semester of 1864, was 84, and during the winter Semester of 1864–5, 85. The average attendance is stated to be 82, which is greater than at the other three Prussian academies of Eldena, Proskau, and Waldau. These various academies differ from each other somewhat in their arrangements, but your readers can form a pretty correct idea of them all, by the example which I have quoted.

It will be evident that these institutions are not mere manual labor schools, where the students literally work their way through, as here they are only required to perform such an amount of out-door labor as is necessary to acquaint themselves with the use of implements and machinery, the care of stock, the sowing and reaping of crops, and other matters relating to the farm. The remainder of their time is devoted to study and suitable recreation.

I mentioned to Prof. Freytag that each State in the Union had received a grant of lands from Congress for the express purpose of establishing such an institution in its midst, and alluded especially to New-York, where private munificence had stepped in to forward the object. I also suggested that they should subscribe for "THE CULTIVATOR," as I found no American journals in their reading room. J. L. T.

To Prevent Bulls Throwing Fences.

Fasten a button securely to each horn; then take some large annealed wire, make a loop large enough to pass a small rope through, and fasten it around the horn close to the button, one on each horn. Take a snap, such as are used to place in a bull's nose, put it in his nose, tie a small rope to the snap, pass it through the loop on each horn, and back again to the snap, and fasten securely. Mr. Bull will walk up to the fence, but will stop before he goes through, on account of a slight pressure on his proboscis. J. L.

CHOKED CATTLE.

D. Hyzer states in the Rural New-Yorker, that he has found that pouring half a pint of melted lard down the animal's throat, relieves it immediately, and without failure. Good managers, by the use of slicing machines, &c., will scarcely ever need such remedies; but sometimes, through the carelessness of hired men, such accidents will occur. We give the above remedy for what it is worth, commending it for trial.

HOW TO MAKE GRAPE WINE.

MESSRS. EDITORS—After the resolves of the United States Temperance Society, held last week at Saratoga Springs, it may be deemed disloyal to write anything by way of encouraging wine-making. I am not only a temperance, but a temperate man, and I may say too temperate to be intemperate on the subject of temperance. I therefore hold that a little pure wine from the grape may, on certain occasions, be useful as well as palatable.

In making good wine the grape should be thoroughly ripened; let them remain longer on the vines than you would to eat or save for eating—as long as they will without dropping. Then pick them and spread them so as to have them thoroughly dried; no water should be on them or in the juice; then mash them so as not to break the pits. Put them into a vat or half hogshead, at a temperature of about 55 deg. I put in the cellar near a window, cover them over with boards, and stir the must once a day; the must acquires sweetness from the atmosphere. This is so with the apple. Take a hard, sour apple and mash it, and the next day you will find it has acquired sweetness, and is quite palatable. Those who make good cider know the importance of letting the pomace remain in the vat a few days. Well then, after you have got your must in the vat or tub, as you stir it daily watch to see when the vinous fermentation comes on; this is indicated by small white spots or bubbles, or by a vinous taste or smell. Then put into a cattle salt bag, and that into a rack to hold it in its place, then into the press Put then, into the cask, full if you can; lay an oil silk cloth over the bunghole, then a few thicknesses of cloth or leather, and on top of that some three or four bricks, so that the gas may flow out without letting in the air. Some weeks after that, say a month, rack it off. The Isabella grape this way will make a good Rhenish wine.

For a stronger article, and one which will keep without souring, from the Isabella grape, add one pound of good pure sugar to the gallon of must as soon as it is mashed, so as to have it ferment with the must, and I have added to 400 pounds of grapes a half bushel of ripe Siberian crab apples, to give more astringency, which improves it as a dry wine. But I would not venture more of the crab, fearing I should get too much of the malic acid. The tartaric acid is essential to good wine that comes from the grape. The malic acid makes cider. I do not know but by leaving the stems of the grape on it would give astringency enough, but I have taken them off, thinking they would absorb too much of the juice.

I have mashed by putting about 2 inches thick of grapes in the bottom of a tub and taking a mallet to crush them; then throw into the half-hogshead. I press by putting up two posts in the cellar, with several cross bars; then setting a half hogshead close up to them; in the half hogshead place two pieces of scantling, a board on top of them; then a frame with slats half an inch apart; into that the bag of must; then a follower, with pieces of scantling above; then a scantling 12 feet long as a lever, with the end in the upright frame resting on the scantling over the must as a fulcrum, and at the other end myself as long as that will cause the wine to run. Then hang on an old-fashioned furnace, such as was used in the kitchen for heating flats; then fill that with iron balls, stones, &c., so as to give a hard pressure. I have found the little cider mills not good for mashing, and ineffectual for pressing.

I intend to make a hand mill for mashing by two horizontal fluted rollers of wood turned with a crank. On the first opportunity I will send you a bottle of wine of that made by adding the crab apple.

Saratoga Co., N. Y. Z. A. LELAND.

HOODED MERGANSER --- *Lophodytes cucullatus.* REICH.

The bird which our plate represents is not well known to the majority of the readers of the COUNTRY GENTLEMAN. We are sorry to state that comparatively little is known concerning it. WILSON contents himself with the statement that "the manners food, and places of resort of both, are very much alike," the other bird that he refers to being the Red Breasted Merganser, (*Mergus serrator.*)

The Hooded Merganser arrives on the rivers and lakes of the Southern and Western States early in the month of October. He comes from the north where he has raised his family, and is moving southward, owing to the increasing severity of the weather.

This species ranges the whole of the United States during the winter.

The Hooded Merganser is an accomplished diver and swimmer. In this respect he nearly equals the famous Loon (*Colymbus torquatus.*) They are so extremely vigilant while on the water, that if a gun be fired at them they hear it coming, and are under water, out of harm's way, before the deadly messenger arrives. Hunters never try to shoot them on the water, as they know that they would only be wasting their ammunition. They have been known to immerse their body under water, and, leaving their bill just above, remain among the weeds until the pursuit is given up.

The plumage of the Hooded Merganser is very handsome. The male requires three years to get his full plumage. The top-knot develops itself during the second, and the third is completing year.

According to AUDUBON, the Hooded Merganser breeds in holes of trees in the same manner as the Wood Duck does. He continues: "They dive as it were directly into their wooden burrows, where on a few dried weeds and feathers of different kinds, with a small quantity of down from the breast of the female, the eggs are deposited."

The female lays from five to eight eggs of a pure white color, but which soon become soiled by the feet of the parent bird. Two specimens of their eggs in my cabinet, which were presented by E. A. Samuels, Esq., of Boston, measure as follows:

Specimen No. 1: Length, 2 2-8 inches; Breadth, 1 6-8 inches.
do. do. 2: do. 2 3-8 do. do. 1 6-8 do.

They were collected near Parmachene Lake, Maine, and are of a pure white color, except where they are soiled by the feet of the parent bird. They are somewhat pointed, and are generally considered very rare. Before Mr. Samuels obtained them, we are not aware that any were in the collections of any individual or institution, excepting the Smithsonian Institution at Washington, D. C., which possessed a specimen that was cut from the ovary of the female bird. This is not the only service that Mr. Samuels has done, and we here take occasion to give him the praise that is his just reward.

[A. O.] J. P. NORRIS.

Clapp's Favorite Pear.

This new variety is yet but little known to cultivators at large, but the fine appearance of the specimens seen at pomological exhibitions, as well as their excellent quality, have given high promise of its value. Allowance should always be made for the greater attention in culture and management which new sorts for a time receive. We have, however, much hope of Clapp's Favorite. In a recent number of the Rural New Yorker, F. & L. Clapp, of Dorchester, brothers of the originator, and who, with the exception of Col. Wilder, are the only persons who have fruited it, state that it is several days earlier than the Bartlett, to which it is fully equal in size, and that the crop was disposed of last year, in the month of August, before any other pear of respectable size was ripe. They state also that the tree is not only vigorous, but proves extremely hardy—they think as much so as Flemish Beauty, which is well known to stand among the first in this respect. It is also stated to be a great bearer. If these points are sustained by further trial and in different places, it would prove one of the most valuable acquisitions of the day.

HARDY APPLES.

A Maine correspondent of the Rural New-Yorker, latitude 45 deg., gives the following list of very hardy sorts for that region: *Summer*—Red Astrachan. *Autumn*—Duchess Oldenburgh, Fameuse, Gravenstein. *Winter*—Pomme Grise, Blue Pearmain, Northern Spy, Yellow Bellflower, Ribston Pippin, Tallman Sweet.

CONCRETE BUILDINGS.

I find the article by A. L. L., (p. 331, last vol. Co. GENT.) interesting to many. If farmers can put up the different small out-buildings required about their premises with the materials found on almost all farms and with little work, and that only requiring ordinary laborers, in so durable a manner too as is represented, and so impervious to vermin, and to storm and injury by fire, it is a subject that should be amply explained.

Having lime, sand, sandstone and water convenient, I have thought of erecting some buildings in this way, proposing to screen the walls of one story, or one and a half, only by projecting eaves.

But on mixing some of the materials and setting the mixture out in boxes as moulds, I found after a month or two of very dry weather, that what should be concrete was not concreted, but fissured in all directions, and on turning it out of the boxes I had innumerable fragments instead of solid blocks.

Perhaps the dry weather caused too rapid a dessiccation, yet it is said that common mortar crystalizes best and becomes most firm, in dry places and dry weather. The lime was fresh and the sand nearly pure, but containing a little clay. The stone was broken sandstone, very irregular in shape.

Will A. L. L. of North Granby, Conn., or other experts in this art, please give details, and especial notes of any causes of failure? It will certainly be welcome and serviceable to very many. W. *Tyrone, Pa.*

One pair of heels is sometimes worth two pair of hands.

SORE EYES.

Almost every person, during some period of his life, has been annoyed more or less with inflamed, diseased, or weak eyes. Many of them are made worse by the haphazard application of severe remedies. There are certain simple applications however, which can scarcely injure, and are nearly always relieving or beneficial. Among these, simple cold water takes a prominent rank. It is, however, often applied by washing or rubbing—the friction of which sometimes overbalances the remedy. A good way to apply it, when the apparatus is at hand, is by means of a fine jet of water, driven from a pipe through a finely perforated rose, so made as not to spread the water, but to throw the jets nearly parallel. In the absence of this a good way is to place two or three thicknesses of fine linen cloth a little larger than the eye, dipped in cold water, on the closed lids. If pain is felt in the ball, the addition of a tenth or a twentieth part of laudanum is relieving. But we have found no better way of applying any liquid to the eye, than to take it in a good sized teaspoon, and hold it in a level position up against the closed lid, the bowl of the spoon very nearly fitting the outside of the eye. In this way the eye may be washed without any friction or chafing whatever. If fine dust has passed into the eye, it may may be easily washed in this way, by opening and shutting the lid a few times, while within the spoon. Sometimes water containing a small portion of salt is found good for strengthening weak eyes, and this may be readily and comfortably applied to the open eye by means of the spoon just described.

The very Best Wax for Sealing Cans, Jars, &c.

One ounce of gum shellac, 1 ounce of beeswax and 18 ounces of rosin.

This cools instantly. You can dip pieces of strong domestic, in the fluid and press them over the tops of gallon jars, by putting your hands in cold water and then manipulating. For strawberries and blackberries, the former especially, common stone jars are much better than cans, causing them to retain both color and flavor. As I am said to have the best of canned fruit, I will detail my plan: Place the cans in hot water and keep them there until filled with fruit that has been allowed to come to a scald in syrup made to your taste with much or little sugar. Put on the covers, remove and and seal instantly. If bubbles arise on pressing the cover, drop a few drops of wax and press down until there are none. In five minutes you can place your jars where they are to remain, as the wax is as firm then as it ever will be. I think fruit much finer to have a little sugar put with it before canning, if no more than you would use on the table. It prevents the leathery look and feel that it has when none is used. This wax is also very fine to seal bottles of wine, &c., as it cools so instantaneously.

I forgot to specify that the syrup in which the fruit is placed must be boiling at the time, and come to a boil again. All who have canned fruit know that the can must be filled with boiling syrup after the fruit has been filled in to the capacity of the can. R.

To Get Rid of Red Ants or any other Vermin as Roaches, &c.

Daub a piece of thick brown paper with molasses, and then sprinkle with arsenic. Distribute around your closets, bins, drawers, &c., and in three or four days you will find that they have all disappeared. R.

Never praise nor dispraise any before you know them.

VARIETIES RUNNING OUT.

One of the oldest varieties of the apple is the celebrated English Golden Pippin. If varieties run out by old age, this should have absented itself long years ago. The London Gardener's Chronicle states that there is a tree of this variety in the celebrated nursery of Thomas Rivers, which is at least a century old. It bears small, scrubby fruit, scarcely larger than a walnut, representing the degenerated condition of this variety under ordinary or unfavorable conditions. This tree is on the English crab stock. Grafts were taken from this identical tree, inserted in Paradise stock, and submitted to good culture in an orchard house, when lo! the fruit became tripled in size, acquiring the richest golden color, and the choicest flavor. We have seen fine and fair specimens within a few years from the grounds of Chas. Downing of Newburgh, and have had equally fine ones from our own grounds.

Advantages of Grinding Corn in the Ear.

MESSRS. EDS.—I see by perusing your columns, that it is still the opinion of some people, that corn cobs are injurious when fed to animals. Now I think there is ample proof to the contrary. What has been the feed of nearly all the cattle that have been fattened in the Western States since the country has been settled—I mean the winter feed? I answer, corn in the ear, often without husking. Well, do the cattle eat the cobs? Yes, nearly the whole of them; and I have not heard the first feeder say that he considered them in the least injurious to the cattle. Now if the cobs are not injurious when fed with the corn on them, it has to be proven that grinding them makes them so, which I think will be hard to do. But the question arises, how can they be ground? One of your correspondents, "Hawk-Eye," pronounces all the iron mills humbugs, but I perceive he is hard to please. He said in the same article that he denounces the mills, that the present race of horse-powers are unsteady and uncertain—the ordinary railroad powers are too severe on the team, and require too much oil. He calls for the help of our inventors to furnish something that can be depended on. Now I think he gives the inventors very poor encouragement. He appears to want a tread-wheel—I say deliver us from the best of them I have seen. I have an iron mill for grinding corn in the ear, which I have used for five years, which I think long enough to determine its merits. Instead of calling it a humbug, I pronounce it a complete success. We convert from six to ten bushels of ears of corn in an hour, into meal that we feed to chicks of two days old up to the ox of two thousand pounds, without any apparent bad effects.

We do not advocate the feeding of cob-meal so much for the nutritive matter contained in the cob, as the facility for getting the corn ground. For with the outlay of fifty or sixty dollars, a farmer can get a mill with which he can do his own grinding at his pleasure, saving the labor of shelling the corn, hauling perhaps several miles to mill, paying toll—the eighth part at least, and sometimes considerably more. I fatten from eight to twelve head of cattle every winter, with satisfactory returns; but I don't see how I could do without a Little Giant. S. F. *Gallia Co., O.*

THE CULTIVATOR.

ALBANY, N. Y., SEPTEMBER, 1865.

Rutgers' Scientific School.—The organization of this department in connection with Rutgers' College, New-Brunswick, N. J., to which institution the land grant fund of the State was appropriated, has been mentioned heretofore in our columns. At a meeting of the Trustees in June last, LUTHER H. TUCKER of Albany, was appointed to the professorship of Agriculture. This appointment has been accepted, provisionally, and in so far as the preparation of a preliminary course is concerned, to occupy some time during the next winter or spring terms—leaving a more permanent acceptance to the test of its compatibility with other engagements.

It will be the aim of the Trustees and Faculty to give the institution a practical character, and with the interest now awakened in Agricultural improvement in New-Jersey—a State itself favorably situated for the development of the highest and most profitable farming—there is every reason to anticipate a good attendance of students, and, we trust, a successful inauguration of the new department. Farther information may be obtained by addressing Prof. GEO. H. COOK, New-Brunswick, N. J.

Hunt's Fodder Cutter.—We have given this new machine a number of trials, along with some of the best cutters used in the country, and have been favorably impressed with its value. It appears to be inferior to none in its power of cutting with ease and rapidity, at the same time that its simplicity of construction, and freedom from liability to break, give it important advantages. It may be made to cut at any desired length, and is consequently well adapted to chaffing cornstalks, and is driven either by hand or horse power.

— To the above notice from our associate, we may add that Mr. HUNT has since had a trial of his machine at Albany, at which we were present, and the success of which fully bears out the foregoing statements. This invention will soon be advertised in our columns, when the public will know where it can be procured.

Entomology.—The Entomological Society of Philadelphia, (whose publications we should be pleased to receive,) have issued a circular as to the management of that institution heretofore, and the funds now required to place it on a substantial and permanent basis. It appears that the lamented Dr. THOMAS B. WILSON, late President of the Academy of Natural Sciences, had given $5,000 to the general fund of the Entomological Society, and $5,000 more in trust toward the publication of its reports. These papers have been issued with the utmost economy—the members of the publication committee themselves performing without charge most of the labor of composition and presswork. The Society is located in a two story building, erected for and devoted to its purposes and uses, at No. 518 South Thirteenth Street, Philadelphia. The library, now including over 1,500 volumes on Entomology and a Cabinet of over 50,000 specimens of Insects, is well provided for in works on Entomological subjects, "and here again the active interest and great liberality of the late Dr. Wilson is particularly observable, for it is to his assistance that its completeness,—making it second to none in the United States in the number of valuable works on our particular department of science —is owing."

Dr. W. had intended himself to supply whatever deficiency there might be in meeting the annual cost of the Society's publications, but his death has deprived the committee of that resource, and they are now seeking to obtain donations towards this object from those disposed to encourage entomological investigations. A circular on the subject may be obtained by addressing the President, J. H. B. BLAND, at the Society's office as above, or E. T. CRESSON, chairman of the publication committee. There are also committees in New-York and Boston who will receive subscriptions.

A Rara Avis.—A California correspondent sends us by mail a Chameleon—one of those animals as to the color of which there has been so much dispute, and which has the reputation among poets of "feeding on air," or like Shakspeare's toad, supporting itself on "the vapors of a dungeon." Our correspondent avers that he has known it to live five months in a trunk, without food or water, and he last year succeeded in sending one alive to a friend in Chicago, which actually survived several months after arrival.

Ours was not so lucky. The journey was too much for him. He started July 15th, and reached us Aug. 11th. Whether the supply of air was insufficient, or the jolting of the long coach ride (for we infer that the overland route was taken) proved too violent, or the pressure from without crushed his delicate organs—we cannot say. But his lustreless eye and flattened form at once showed that vitality had departed. He was not destined to know the cities of the East, and the curious glance of stranger eyes. Of his hues there is no longer room for argument, and as to food and moisture, whatever may have been the case before, never more will he again feel need of either. The odor of mortality clings to his remains, and we dismiss him with a sigh.

Death of a Merino.—The Middlebury Register of the 9th learns "that Mr. Hammond's best ram, 'Gold Drop,' died on Sunday night. This sheep probably had a better reputation than any other that ever lived. Mr. Hammond could at any time for a year past have taken $10,000 for him. He was valued at $25,000. He will be sincerely mourned by all sheep breeders at home and abroad. He was four years old."

The figures quoted above require no comment to show the point which the "sheep fever" of the past three or four years has reached. Without disputing the fact that the price named might have been taken for this ram, or that the valuation put upon him had a foundation in his actual earnings,—no sensible man can claim any basis on which either should rest, beyond the current fashion of the day, and a most exaggerated notion, industriously diffused through the community, of the merits of the sort of sheep of which the animal mentioned was an example. While such a mania lasts, paragraphs like the above attract comparatively little notice; when the mania is over, and people sit down to count the cost in the sober light of ultimate returns, these "fevers" and those who take part in inciting them, appear and are commented on, in a very different way.

Thomas's Pronouncing Medical Dictionary.—This new work, from the press of Lippincott & Co., of Philadelphia, is one of the most complete and compact works of the kind that we have met with. The high reputation of its author, established by his Universal Pronouncing Gazetteer, and other kindred works, imparts much value to the pronouncing department,—which, embracing all the more common botanical and other scientific names, renders it extremely convenient to students and readers generally. Its etymologies are interesting and valuable. In the words of Dr. D. H. AGNEW, "We have never seen more industry, research and scholarship, compressed in so small a compass—and know of no book which combines so pre-eminently, thoroughness and brevity." We recommend this work to all students in medicine as well as in science.

Obituary.—HENRY P. BYRAM, formerly one of the editors of the Valley Farmer, and for many years an occasional correspondent of our own, died at Sag Harbor, Long Island, August 6th, in the 62d year of his age. The event was not an unexpected one to himself or to his friends, as he had long been a sufferer, especially from a bronchial disease. During the most active part of his life, Mr. B. was a resident of Kentucky, where, both by the use of his pen, and by the introduction of improved machinery, he labored with great benefit to the agricultural interests of the Southwest. He was a clear, ready, and practical writer, and a good observer and thinker. Notwithstanding the protracted period spent in other States, he still looked back to his birthplace as a home, and when by loss of health he felt himself incapacitated for much farther exertion, he retired thither to pass his last years. He had almost begun to hope that this change would bring recovery with it, when in 1862, having been invited to witness a governmental trial of artillery, the premature explosion of a shell fractured his kneejoint, rendering amputation necessary. Contrary to all expectation he survived, and, for more than two years and a half since, the natural vigor of his constitution had been withstanding the gradual but certain approach of death.

Infantado versus Paular.—

"A branch of Mr. ATWOOD'S family of HUMPHREYS' Merinos was established in Vermont, which has become much more numerous than his own. The prominent founder of this new family was EDWIN HAMMOND of Middlebury. * * * Mr. HAMMOND has kept the HUMPHREYS blood absolutely pure down to the present day. * * * The only question at issue is, 'was Col. HUMPHREYS' sheep pure *Infantado* Merinos?' We have already expressed our *utter* indifference in regard to this fact, in itself considered. * * * The name Infantado appearing to be acceptable to a large proportion of the owners of the highly improved sheep of this family, we * * * now proceed to give the 'scattering hints and circumstances' which led to its adoption."

Our attention is called to a long editorial in the Sheep Husbandry Department of the last Rural New-Yorker, from which the above extract is taken. And we are reminded thereby that the original of a somewhat interesting certificate was lately shown us, a copy of which may be worth the space it will occupy here:

"MIDDLEBURY, VT., *September* 23, 1847.

"This may certify that I have this day sold to D. P. POND of Cornwall, State aforesaid, six full blood Merino ewes, four of them being of the age of one year: and one of them bearing the age of two years. *Said sheep are of the* PAULAR *breed*, a part of them being purchased by myself and R. P. HALL, of STEPHEN ATWOOD of Connecticut: and the other portion of said ewes were raised by me, and are precisely the same in pedigree as those purchased of Mr. ATWOOD, as I bred them from said Atwood sheep. I will here insert a certificate which I obtained of Mr. Atwood: and reads as follows:

"'WOODBURY, *January 27th*, 1844,
'*Litchfield Co., State of Connecticut.*

"'This may certify that EDWIN HAMMOND and R. P. HALL of Addison County, State of Vermont, have this day purchased of me three full-blood Merino bucks, and of me and others twenty-seven full-blood Merino ewes, *descendants from my flock of the* PAULAR *breed, which originated from the celebrated flock imported by Colonel* HUMPHREY of Derby, Newhaven County, State of Connecticut. STEPHEN ATWOOD.'

(Signed) "EDWIN HAMMOND."

Our contemporary would be the last to admit the idea that the language of the above certificates could have been loosely or thoughtlessly employed, or upon incorrect or insufficient information on the part of the writers. We were told but a week or two ago, in the same columns, with reference to the pedigrees of certain other Merinos, that if Mr. Cock delivered to Mr. Bedell a particular certificate "as giving the pedigree of the sheep sold to him, which pedigree represented the sheep to be pure Paulars, and they were not pure Paulars, then *Cock was a liar and a swindler*." It may be very gratifying to verify so completely a "belief" that "the name Infantado" is unmistakably "the correct one" for the Hammond and Atwood sheep—but can it be altogether agreeable to the parties immediately concerned? They are again and again assured, however, in the language of Mr. TOOTS, that "*it's of no consequence*"—although, to be sure, a gentleman and a patriot like Col. Humphreys would never have "sent round his 'most respectable' agent to pick up second-rate sheep" like the Paulars.

It is true that about twenty years ago "the name *Paular*" happened "to be acceptable to a large proportion of the owners of the highly improved sheep of this family," and—"the Humphreys blood" having been kept "absolutely pure down to the present day," and consequently being pretty much the same thing in 1813, in 1847, and in 1865—the question once more recurs, "*was* these sheep pure Infantado Merinos," after all? *Our* "utter indifference in regard to this fact," need not be expressed. It is for the gentlemen whose names and credit are involved, to settle the matter with the Rural New-Yorker—unless they, too, take the TOOTS view of the case, that "it's of no consequence!"

A Veteran Wool-Grower.—Our venerable correspondent and subscriber, N. P. ATKINSON, Esq., of West Virginia, mentions in a recent note, that at the commencement of the war of 1812, having been forced to leave Canada, where he was then in business at Montreal, in company with Mr. W. F. Peterson, they came to Baltimore, and seeing in a Washington paper an advertisement of Spanish sheep for sale by the importer, they went thither and purchased fifty-two sheep for the sum of $1,850. These sheep were first taken by Messrs. Atkinson and Peterson to Washington county, Pennsylvania, but after two years' residence there, Mr. A. removed to the vicinity of Wheeling, where he has since been engaged in wool-growing—a period of about half-a-century. Mr. A. says: "If any considerable portion of the farming community had embraced the wool business with the same forecast and perseverance, our supply at this time would have been of the most ample character both as to quantity and quality. What makes our sheep enterprise more of an out of the way concern, is the fact that we were neither of us raised farmers. As a general rule pecuniary considerations afford the motive power leading to new enterprises, and while we were not singular in this, yet there were other considerations of great weight—we saw by the eye of faith the end from the beginning, or, in other words, what has really transpired in the woolen department of our manufactures for the last fifty years. It is a matter of regret that with our pre-eminent facilities for raising sheep, our supply of wool should still fall so very much below the national demand."

Mr. A. adds that he has passed his eightieth year—a fact we should not have suspected either from his manuscript or from his facility of expression.

Shares' Harrow.—This implement having been inquired about, a correspondent writes to second our suggestion that the teeth should be of steel instead of cast iron. He says it will do more execution in passing over the ground once than a common harrow in twice. We understood some time ago that a new process of hardening iron castings to render them nearly equal to steel, at much less cost, was about to be introduced, and that a trial of it would be made with Share's harrow. The result we have not learned.

A New Grape.—A correspondent sends the following:—"Mr. James Smith of Des Moines, Iowa, has originated a grape which bids fair to make some noise in the world, when it is propagated sufficiently for distribution. It is about as good as the Concord, as far as quality is concerned, is perfectly hardy where the mercury sinks to —30°, and ripens eight days in advance of the Hartford Prolific. He has christened it the FLORENCE."

Agricultural Education—Good Advice from High Authority.—Mr. Secretary KLIPPART, who is now travelling in Europe, has written a letter to the Ohio State Board of Agriculture, which we find in the columns of the last Ohio Farmer. It contains his account of an interview with Baron VON LIEBIG on the subject of Agricultural Education; and the advice given not only coincides with the views we have always entertained, but applies to the fullest extent, both to our institutions of learning generally, and especially to those in process of organization for Agricultural purposes. LIEBIG is represented as saying:

"In Ohio you do not want to build a *palace* for an agricultural school. In America you spend too much money in putting up your educational buildings, and then starve your professors. I learn that you put up a very grand building in your city of Columbus, called the 'Starling Medical College;' I have a picture of it; I am told it cost some $70,000 or $75,000, and now you are starving the professors in it. You did the same in Cleveland and Cincinnati; then I am told you built *two* universities in Ohio, and now the professors can barely live on the salary you pay—the consequence is that these schools, colleges or universities must run down. There is no place in the whole world where knowledge can make so much money as in America; therefore your *best* men will not become teachers or professors—simply because they can make more money out of something else, and they naturally apply their talent and ability where it pays the best. No man will engage in an educational course of life *for life*, on a salary of $1,200 or $1,500 a year, when by applying the same ability in some other pursuit, he can make $4,000 to $5,000 a year. Hence you have no *first class professors* in all America, but you have instead, first class business men, first class mechanics, and managers of large and colossal establishments. Now I am afraid that out of your large fund of money you will think that you must at least build another 'Starling College,' or even a yet more expensive establishment. You want an ordinary good building, but you don't want the twentieth part there is at Hohenheim. Then, too, I am afraid that after you have your buildings, you will employ third or fourth rate professors, and you will find that your establishment will languish, and your standard of attainments will be very low. These are your great dangers. On the other hand, with an ordinary and convenient building, *first rate professors and well paid*, you may rest assured that Ohio will take high rank in the agricultural world."

On the subject of managing the Farm connected with an Agricultural College, LIEBIG expressed himself as follows:

"The manager or director of the establishment should be a man thoroughly versed in scientific agriculture; because the experimental farm is for the purpose of making experiments *purely*, and not for the purpose of maintaining or supporting the school. The scientific director can see that the proper experiments are made, and the experiments should always be made in direct consideration of being put into general practice; that is, they should all tend to producing the greatest crops at the least expense and without exhausting the soil, and of course be of such a character that all the farmers may avail themselves of the methods; because if your experiments cost more than the crops amount to, nobody will repeat them, and you have made no advance in agriculture; although you may have solved a problem or ascertained a fact, yet for agriculture generally it is of no value. If, on the other hand, your director is a practical man only, and not a scientific man, he is only repeating on the experimental farm what is perhaps being done on every well-regulated farm in the State; and therefore you are making no progress. You can never persuade a practical director to make proper experiments."

"You don't want much land," continues Liebig; "a few hundred acres is all sufficient for all manner of experiments, and you must allow me to repeat, you want to make *experiments* only—you don't want to teach a specific system of model farming, for many reasons; firstly, not one student perhaps can get a farm precisely like your model farm: he may not be able to get so much grass land or so much upland, or may be unable to have farm buildings precisely like the model ones; then what good does your model do when nobody can copy it?—and to copy a part of the model impresses the ignorant that the whole is copied, and the results in copying a part cannot be as great or as beneficial materially as if the whole were copied, and yet the moral effect is that that part represents the whole; therefore I would not advise model farming. Hohenheim set out with the idea of being a model farm, when there were not half-a-dozen estates of the same extent or geological structure in all Wurtemburg; and as a matter of course it must fail as a model, for nobody but kings or princes could copy it, and small farms could not even attempt it. Confine your institution to experiments, and as for practice, you have every day at your service the practice of the whole State of Ohio. Let the students visit the best farms in the State, and see how things are managed, and it will do them more good than if you undertake to carry out the model idea. Now when you get home, pray do not misrepresent this idea. I want you to make experiments, not simply to show what *can* be done, but make experiments to show what can be done *profitably*, and what may be done by any intelligent farmer. Of course you cannot expect to accomplish much for the present generation of farmers, but the seeds you sow will be reaped by the coming and future generations."

Obituary.—F. K. PHŒNIX writes us under date of Bloomington, Ill., July 20:—"Our most worthy and well beloved C. R. OVERMAN, died yesterday morning after an illness of but a few days, with inflammation of brain and stomach. One of the earliest and most active of our Illinois nurserymen, whom to know was to love—his earthly record is closed up, making a sad, irreparable breach in our old nurserymen's phalanx, hitherto apparently impregnable. Bitter the cup to his own large family circle, and sore the loss to American, especially Western, Horticulture. But the Good Father knoweth best."

Fruit Prospects in Western New-York.—A tour through portions of the best fruit producing districts of Western New-York, proves that the crop this season will fall far below the usual yield, and will be scarcely sufficient for the home supply.

Two-thirds of the apple trees bear little or no fruit, while a small portion produce a moderate yield. In consequence of the abundance of rain this summer, and moderate fruiting of the trees, the quality of fruit will be excellent, and return large profits to those who are so fortunate as to possess large orchards which have been properly cared for.

Peaches are also very scarce, and consumers must depend on New-Jersey and Delaware for their supply this season.

The orchard caterpillar has had much to do in causing the short crop this season, and unless a war of extermination is commenced now, and kept up until the time they commence and end their ravages, there will be less fruit next year than there is this. A close examination of many orchards, discloses the fact of the existence of immense numbers of the cocoons of the orchard caterpillar. Let others satisfy themselves of this fact by a like examination, and act accordingly if they desire to preserve either fruit or trees. Even on young apple trees planted last spring, and which have made only about a foot of growth, I have found as many as nine cocoons; each of which would produce a colony of caterpillars that would defoliate the whole tree if unmolested; and on old bearing trees they exist in incredible numbers, in fact almost too numerous to count, and I will predict that unless their destruction is attended to, we shall have but a small crop of fruit the coming season; and their continued attacks must eventually destroy the trees, as where they are stripped of their leaves for a number of years in succession, and put out a late growth the latter part of summer and fall, they cannot certainly withstand our severe winters as well as the natural early growth, which ripens and matures its wood before the severe frosts occur. *.

Foreign Notices.

American Implements.—The Royal Agricultural Society of England, as our readers are aware, have adopted the system of trials in the field each year of certain kinds of agricultural machinery. Reapers and mowers had their turn at the Plymouth meeting just held, and the prize awards are certainly gratifying to American pride—as will be seen by the following list:

MOWING MACHINES—FOR TWO HORSES.

1. W. A. Wood, London, (and Hoosick Falls, N. Y.)..... £10.
2. R. Hornsby & Sons, Grantham, ... 8.
3. H. Kearsley, Ripon,... .... 7.

COMBINED REAPERS AND MOWERS.

1. R. Hornsby & Sons,..... ..... £8.
2. W. A. Wood, ... 7.
3. A. C. Bamlet, Thirsk,..... ... . 5.

REAPING MACHINES—FOR ONE HORSE.

1. W. A. Wood,..... ..... £9.
2. Samuelson & Co., Banbury,..... ..... 6.
3. R. Hornsby & Sons, ... 5.

REAPING MACHINES—FOR TWO HORSES.

1. Hornsby & Sons,..... £10.
2, and 3. Hornsby & Sons, and Picksley, Sims & Co., *each* 5.
1. R. Hornsby & Sons, for self-acting swathe-delivery reaper,..... £25.
2. Samuelson & Co., self-raking reaper, ... 15.

The editor of the Irish Farmers' Gazette remarks: "Although we place no faith in the mode of trying the mowing and reaping machines by the dynamometer, from the excellence of the work produced we are quite satisfied with the awards given the several machines in these classes. Wood's, it will be observed, has justified the results so frequently given in our Irish trials, taking first prize in the trial for mowers, and in that for one-horse reapers, and second for his combined machine."

Mr. Cranston exhibited a hay maker or tedder, which from the description we suppose to be of Bullard's patent, but it does not seem to have received any award. An American churn of the Jebb patent, appears to have attracted much attention.

Subsoiling.—The deepening of the soil produced by this process, is often especially advantageous on those lands in which the first opening up of the unhealthy substratum is temporarily injurious. MECHI says that this danger should be met by an increased supply of manures for two or three years, and adds:

Of course by disturbing and intermixing with the cultivated surface, it naturally robs it of part of its goodness, and imparts to it a portion of its poverty. It often happens, on bringing up the subsoil, a crop of weeds grow up from long-buried seeds. I therefore strongly advise a root crop after subsoiling, because then the land is well manured, often hoed, and when the crop is removed, a vast quantity of strong roots remain in the subsoil, and afford food for the ensuing crop. All deep tap-rooted crops do well on newly subsoiled land, such as beans, roots and rape; but I prefer the land becoming more solidified for white crops, particularly wheat. I consider it profitable to subsoil or trench-plow for every root crop, even if you grow them alternately with wheat; it only adds a little trifle to the expense, and I am sure it makes more than double that difference in the quantity of roots.

A Merited Honor.—With pleasure we note that the farmers of East Norfolk have requested Mr. CLARE SEWELL READ to stand for Parliament, and subscribed liberally toward his election expenses. Mr. R. is an agricultural writer of much prominence, and we cherish a lively remembrance of the kindness he manifested in forwarding the objects of our visit in the Eastern Counties some years ago. To his attentions we were indebted for much information at Norwich, as well as for an instructive visit at his residence at "Plumstead," an account of which was given in the COUNTRY GENTLEMAN of May 3, 1860.

It is highly creditable to the farmers and proprietors of Great Britain that they are so ready to acknowledge the services of those who labor to promote the agriculture of the country. Mr. CAIRD, and many more who might be named, have owed their seats in Parliament largely to this cause; while testimonials of a very valuable kind are of almost constant occurrence—witness those to the memory of JONAS WEBB and FOWLER the inventor of the steam plow, since their death, and, during life, the munificent present of a complete laboratory some years ago to J. B. LAWES, Esq.,—the project now in successful progress to buy the farm of Tiptree as a gift for Mr. MECHI,—the testimonial within a year or two to the editors of the Irish Farmers' Gazette, and a long list of similar acknowledgments quite as creditable to the donors as to the recipients of the honor.

Small Pox in Sheep.—The London Field mentions a new outbreak of this disease:

"A subject which was brought before the last meeting of the Royal Agricultural Society by Mr. Simonds cannot fail to produce, under present circumstances, an unwelcome impression. Mr. Simonds stated, for the information of the council, that another outbreak of small pox in sheep has just taken place; this has occurred on the Sussex downs, amidst large flocks of sheep, midway between Lewes and Newhaven. The Professor visited the flock, comprising six hundred ewes and lambs, and among them were found sixty-five infected with the disease. This is most unwelcome news, for with the meat markets ruling at present high prices, should the infection spread it will indeed become a national calamity. In our last number we pointed out that there was a fearful typhoid visitation among the pigs, and with this disease in sheep superadded, the future prospects of meat supply seem rather hazardous. We can only hope that by the experience gained during the former appearance of the disease, it may be arrested in time to prevent farther damage, and thus preserve our flocks for our use in due season."

From other sources we learn that official measures have been taken to prevent the spread of the disease, as appears by the following notification concerning it published in the London Gazette:—"In pursuance of powers contained in the Acts to prevent the spreading of contagious or infectious disorders among sheep, cattle and other animals, the Lords of the Privy Council have issued an order regulating the removal of sheep or lambs to or from the parish of Southease, near Newhaven, Sussex, where the sheep-pox, or variola ovina, now prevails."

Farmers for Office.—Another distinguished farmer standing for Parliament in the recent British elections, was Mr. GEORGE HOPE, of Fenton Barns, East Lothian,—a gentleman of the highest standing and a most successful agriculturist. Although unsuccessful in the contest, his competitor, Lord Elcho, having been backed by the aristocracy of the district, Mr. Hope received a most creditable support, and will lose nothing by his defeat. After the close of the poll at Haddington, both candidates briefly addressed the crowd, Mr. H. being received with cheers and enthusiasm, while Lord Elcho met with the constant interruption of hisses and insulting cries.

Thinning Root Crops.—In an interesting article on the "later stages of root crop culture," the Scottish Farmer insists upon the importance of careful and thorough thinning out of the superfluous plants. To the proper performance of this operation it ascribes much of the difference between a good crop and a bad one. "Three points, at least, demand attention; first, the strongest plant, if possible, ought to be left, while the weakest should be cleared away; secondly, each plant should have the maximum space of soil to develop its bulb in; and, thirdly, no two plants should be left together to interfere with the individual growth of each."

Wool in Ohio.—A friend writes us from Ohio under date of June 27: "Wool sold the past week in several places in Ohio for 70 cents! We think the Rubicon is won!! Our people still continue as firm as ever in their views of the future."

Inquiries and Answers.

Guano.—How much guano should be sown per acre on oats where clover seed is sown, and what effect would it be likely to produce on both the oats and the *clover*? Would it insure a "*catch*" on light dry soil? Would it be well to sow guano with winter rye, where clover will be sowed in the spring, and, if so, how much on poor soil? What is guano worth at present per hundred or ton? E. R. *Otsego Co.*—[From three to five hundred pounds per acre is the usual amount of guano. Unless sown just before a long rain it would be best to harrow it in. A top dressing of common fine manure is better to insure germination or a "catch,"—the guano only promoting the growth of the young plants after they have started. Guano promotes the growth of all crops benefitted by common manure; but its influence is not permanent. We do not know the present price of guano.]

Bone Dust.—1. When is the best time to apply bone dust to meadows—spring or fall,—where grass is running out? 2. Is there a machine for sowing bone dust or lime; if there is, where can it be found? 3. Should bone dust be applied raw, or mixed with sulphuric acid? S. D. F. [Bone dust being a slowly operating manure, it is not essential at what time in the year it is sown. It must be harrowed or otherwise mixed with the soil. Seymour's broadcast sower, or other similar machines, will doubtless answer the purpose, but we cannot inform our correspondent where it can be obtained. Bickford & Huffman's Wheat Drill, made at Macedon, N. Y., sows concentrated manures with the seed. Bone dust, mixed properly with sulphuric acid, becomes a more powerful manure, but less permanent.]

Cows Milking Hard.—I have a cow, a valuable animal that milks hard, al o her teats are covered with warts. Can you tell me through the volumes of the CULTIVATOR of a remedy for either? C. W. Y. [Cows frequently milk hard in consequence of too small a perforation in the outer skin, and the difficulty may be often removed by introducing a penknife and making it slightly larger, sometimes by thrusting in a small straw, or a very small quill, and allowing the milk to run for a few times, will enlarge the orifice. In other cases a strong handed milker, causing a rapid flow, will accomplish the same purpose—the ends being previously softened in warm water. We cannot state the best way for removing the warts.]

Corn on Sward.—I have a piece of green sward which is intended for a crop of corn next season. How should it be managed? L. R. [If a top-dressing of manure, even if a moderate one, could be applied to the grass any time the coming autumn, or even early in winter, it will much increase the amount of the crop by soaking into the soil. Next spring a short time before planting, invert the sod evenly and perfectly, roll if necessary, and harrow it, and plant corn. If a Shares' harrow could be procured, it would be useful, as it operates at the same time both as a roller and harrow, and mellows the soil to a greater depth.]

Butter Making.—J. N. G., *Taneytown, Md.*, would like to know where "a good butter separator" can be procured—also to have "a good receipt for making and packing butter." If by the former a butter worker is intended, we know of none that has come into very general use; there is one made at Philadelphia, about which he could address Paschal Morris for information, which has the reputation of a good machine. As to butter making, numerous articles may be found in our back volumes, and many valuable suggestions in the volumes of RURAL AFFAIRS, [3 vols. $1.50 each.]

Wheat on Timothy Sod.—Will wheat do well sowed on a timothy sod—turned under after the hay is cut and sowed on the sod in the fall and harrowed in? C. F. S. *Ohio.* [If the sod is turned over deeply and laid flat, and thoroughly harrowed, (best with a Shares' harrow,) with the addition of a good top-dressing of fine manure, it will probably succeed well. If the soil is quite heavy, it may not be sufficiently loose, unless there is clover mixed with the timothy—clover being one of the best looseners for heavy soils.]

Blackberry.—Should not the Rochelle be shortened-in, in the fall, and when the old ones are removed? B. [The best way to shorten-in is to pinch in early in summer, thus preventing the long growth which would otherwise take place, and making stout, compact, snug bushes. If allowed to grow their full length, we would not cut them back in autumn, but leave them till spring, as all severe pruning renders trees and shrubs tenderer. If, however, they were cut back now, before the close of summer, they might become sufficiently matured and hardened.]

Lime in Compost.—Would you put in lime with muck, in compost with stable and slaughter house manure, or spread the lime over the fields alone, and at what season? T. H. B. [We prefer mixing the lime with the compost, as in this way it becomes more intimately diffused by the time it is applied to the soil—about one-twentieth or one-thirtieth the bulk of the compost.]

Work on Small Fruits.—Can you tell me what books to procure, or where to look for brief but reliable information as to the planting and cultivation especially of strawberries and grapes, but also of gooseberries, blackberries, currants, and raspberries? Living in the country, engrossed during the most of the day by my business, I am anxious to relieve the pressure of business engagements by devoting a portion of my time to the cultivation of fruits. LEX. [Fuller's treatise on the Grape is one of the best, and may be obtained at this Office—price $1.50. The first volume of "Rural Affairs," also the Illustrated Annual Register for 1865, contain much information in relation to the management of other small fruits.]

Tanning Sheep Skins with the Wool on.—I have at some time or other seen in the Co. GENT. a recipe for tanning sheep skins with the wool on. If you have it at hand please republish it, and you will confer a great benefit on many of your subscribers. J. O. *Frederick Co., Md.* ["Take one tablespoonful of alum and two of saltpetre; pulverize well and mix together thoroughly. Sprinkle this powder upon the flesh side of the skin and fold together with the wool out; hang up in a cool place. In two or three days, as soon as dry, take down, scrape the flesh side with a blunt edged knife till clean. This completes the process. Such skins make excellent saddle covers."

Cows Calving in Autumn.—Wishing to have about 40 cows calve in October instead of April, (for the purpose of selling milk,) I would like to know if there is much danger of their not being in season in the month of January, in a Canadian winter, if protected by warm stables? Perhaps some Canadian, or other obliging farmer, may have made the experiment, and will be kind enough to publish it. L. WELLS. *Brome Co., C. E.*

Horse Radish.—Your correspondent from Chicago, Ill., wants to know how to kill horse radish. He can do it every time, by planting turnips or cabbage, and keeping the earth well worked with the *hoe*, for not more than one or two years. S. W. S.

Snap Dragon.—Can you or some of your numerous readers inform me how to effectually destroy the noxious weed called snap dragon. It grows to some extent in my neighborhood, and I would give my neighbors a helping hand to destroy it and keep it from spreading. O. B. *Fondulac Co., Wis.*

Wine Making.—Please insert in your CULTIVATOR, a receipt for making grape wine and brandy. D. E. W. *Milton, Del.* [We are promised an article on wine-making from a gentleman of considerable experience. In the meantime we give the following from W. O. Hickok of Harrisburgh, Pa. "Pick the grapes off the stems when fully ripe, rejecting the bad ones. Pass them through the wine mill to tear open the skins, but not to bruise the pulp. Press moderately, then get all that remains in the must to make brandy or an inferior sour wine of. Strain and fill into clean barrels; then insert a bent tube tight in the bung, and let the lower (outside) end rest under the surface of water in a bucket, so that while all the gas shall escape, the air will not get into the wine. When it has done fermenting, rack it off into clean barrels, bung it up and set in a cool place—bottle it in a few months. The great secret of making good wine is to select only the best grapes, and not press out the sour portion of the pulp. Nothing is here said about the numerous mixtures of water, sugar and grape juice which are frequently concocted, and sold under the name of wine, but only to the pure juice of the grape, properly fermented."

Wheat---Peavines, &c.—On a field I have a crop of peas growing; they will not ripen in time to harvest and prepare the ground for wheat this fall. How would it do to plow the green vines under? Some tell me they sour the land, and injure the wheat crop, others thought it would be equal to a good dressing with manure. Now you who have tried it or known

it to be done, please communicate the result at your earliest convenience. Farther, I have fine barnyard manure which I wish to apply, and seed down with timothy. Would not a top-dressing, if dry weather, injure the "catch" of the timothy seed? And here comes the question in regard to the amount of grass seed it is best to sow? In this section we think six quarts per acre good seeding, especially if clover is sown in the spring. In the Co. Gent. I often see statements of correspondents sowing half a bushel per acre; this is more liberal than I have ever known to be done, and wish your views if profitable or otherwise? One more question, brother Englishmen, has the horse bean, so extensively grown and fed in England, ever been raised with profit in this country? J. S.

Newfane, N. Y.

Stump Machines.—Will you please give the subscribers to "The Cultivator," an article on stump machines—the benefits, the different kinds, the prices, and where they can be had, and whether patented or not? I have no doubt an article of the kind would be of great benefit to a number of your subscribers at this time. W. H. Lease. [There is no subject on which we have more frequent inquiries than this, and no kind of machines less advertised than stump-pullers. If such of our correspondents as live in newly cleared districts, will give us the desired information in relation to the different machines they have tried and used, stating concisely the name and character of the machine, number, size and kind of stumps pulled in a day, with amount of team and number of hands required, also price and durability of machine, they would doubtless confer a favor on many of our readers. Willis' Stump-Puller, advertised by R. H. Allen & Co., 189 Water-st., New York, is one, we believe, of the best machines, in the country.]

Killing Briers.—Some of my neighbors are very much troubled with what they call "dew-berry vines," on their farms—a small running vine like a brier, but it does grow tall like a brier, but the *fruit* is similar. Whole fields are covered with it, and it chokes out all kinds of small grain—wheat, oats, barley, etc. How can it be destroyed? N. P. Florel. *Jennings, Ind.* [We have had no experience with this plant as a weed, but a universal remedy applies in all cases where practicable, namely, *smothering*—as no plant can live a few months even when it cannot breathe through its leaves. Doubtless successive deep plowings often enough to prevent the formation of leaves above ground, as we have often practiced with the Canada thistle, would completely destroy them in a single season. A crop of buckwheat, which densely shades the ground, preceded by two or three good plowings, would probably tend to destroy the weed. Or corn sown in drills for fodder, at the rate of two or three bushels per acre, and cultivated two or three times, would be useful. But to be completely effectual the whole surface must be kept entirely clear of growth.]

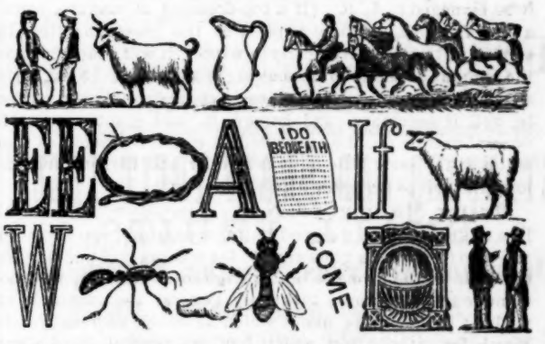
Ice-House.—I have a bank of earth just in rear of my house, some 6 or 8 feet in height. I think of digging out a space 10 or 12 feet square, and stoning up for an ice-house. I thought of laying a dry wall, and point and face with a coarse mortar. Would not ice keep nicely in such a place, and as I wish it proof against rats, would it answer a good purpose to mix some *water-lime* with common lime for mortar? I think I could make a very handy and convenient ice-house, as I could fill from bank in rear, and take out from front side. C. P. Bates. [An ice-house may be built in the mode proposed provided thorough drainage is furnished at the bottom, with the perfect exclusion of air from below, and free ventilation allowed at the top, so that external air may pass freely. If there is no inner boarding provided, so as to leave a space of 8 inches to a foot for filling with sawdust, it will be necessary to build the ice in a square mass inside, and ram in sawdust between the ice and the outer walls. There appears to be no object in excluding rats, as they do not eat ice. The best arrangement for keeping ice that we have ever found, is a house built of wood above ground, described and illustrated on page 23 of Illustrated Annual Register for 1864.]

Heavy Soils.—I wish to make the inquiry as to the probable cause, and of a peculiarity in the soil of my garden. It has been used as such three years. Before that time was occupied by a barn and barn-yard; is a strong soil, and bears well, its only fault being that it bakes very badly, and of course becomes dry and hard. The soil in the vicinity is not at all of this kind, being loose, friable, and easily worked. It is probably underlaid by a ledge, (but not very near the surface,) as one crops out at a short distance. Can you or any of your readers give me any information on the subject, and also whether the soil can be made mellow and friable as a garden should be. I also wish to know whether you have any receipt for removing spots of mildew. Alex. Wells. *Deerfield, N. H.* [There is probably an unusual amount of clay, and perhaps not sufficient drainage, causing the soil to become very wet in spring and to bake subsequently. If this is the case, thorough draining will make it gradually more friable, as the subsoil becomes slowly traversed with cracks and seams. In addition to this, draw on a thick coating of clear sand, if to be had, and work it in. This makes a permanent improvement which never diminishes or wears out. Next to this, coarse manure or chopped straw will render the soil lighter for a time. Enriching and good cultivation, by inducing the extension of roots, will always render a heavy soil looser. We have never found any efficient remedy for the removal of mildew from clothes, although time, use and washing will gradually lessen it.]

Transplanting Evergreens.—Will you inform us through your valuable paper, when is the best time in the season for transplanting the Balsam and other evergreen trees? J. C. W. [The best time for transplanting all evergreens is in the spring of the year, just before or about the time they commence growing. Autumn does nearly as well, if they are perfectly hardy, and are protected from severe winds, and have the surface of the soil mellowed in spring. Sometimes they succeed well when removed in summer just as the growth ceases. Trees growing well cannot be removed with a certainty of success without taking a considerable mass of earth with the roots, and with this care they will never fail. They may be removed at midsummer, if earth enough is carried with them.]

Illustrated Rebus---No. 26.

Illustrated Rebus---No. 27.



Illustrated Rebus---No. 28.

Answers to Illustrated Rebuses.—No. 23. Pleas-ant *words* R (are) as h-on-i (honey) combs-weet II (to) the sole (soul) and health tooth-e (to the) bones. No. 24. "A little leaven ('leven) leaveneth ('leventh) the whole (hole) lump." No. 25.—"A wise son makes a glad father"—a w-eyes-on-may k's e-gg-lad fat-*her*.

GRAPEVINES.

Delaware, Concord, Diana & Hartford Prolific.

We have growing for sale a large stock of the above varieties of superior quality, from long cuttings, and layers from bearing vines. Also IONA, ISRAELLA, ADIRONDACK, &c.

We make the propagation of the grape a speciality, and our vines have uniformly given excellent satisfaction. Send for Price List.

I. H. BABCOCK & CO.,
Aug. 17—w2t. Lockport, N. Y.

SEEDS OF THE SILVER THORN.—Having a a fair crop of home grown seed of this

SPLENDID NEW HEDGE PLANT,

which I am desirous of seeing extensively tried all over the United States, instead of raising the plants myself, the seed will be sold in packages so as to give every nurseryman and amateur interested in a cheap and beautiful hedge an opportunity to try it. A specimen hedge, only *eighteen months* planted, the public are invited to see at our Germantown Nursery.

Packages of 100 seeds, 50 cents; 12 packages, $5, mailed free.

THOMAS MEEHAN,
Aug. 17—w3t. Germantown, Penn.

10,000 PEACH TREES,

Of Selected Varieties,

including HALE'S EARLY, grown on ground never before planted with peach trees.

5,000 APPLE TREES,

5 to 10 feet high, well grown and stocky. The above trees are offered in quantities to suit; trees dug with care, and packed in best manner. Catalogues gratis. Address

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Aug. 17—w2t. Paoli, Chester Co., Penn.

FOREIGN SEEDS,

Growth of 1865.

THOMAS McELROY will, on and after the **1st of September,** receive orders from the trade, for FOREIGN AGRICULTURAL

GARDEN & FLOWER SEEDS,

growth of 1865, for FALL AND SPRING TRADE. Correspondents will meet with attention.

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Offer an immense stock of well grown

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SMALL FRUITS,

Ornamental Trees, Shrubs, Plants, &c.,

FOR THE AUTUMN OF 1865.

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SECOND

Exhibition of the

N. E. AGRICULTURAL SOCIETY,

AT CONCORD, N. H.,

Sept. 5, 6, 7 and 8, 1865.

Premiums Offered—$8,000.

CATTLE.—The Society's Medal is offered for the best Bull of any age of each breed; also one for the best Cow or Heifer; open to competition to *prize* animals, and to animals from any part of the United States or the Canadas.

HORSES.—On Friday a *subscription sweepstakes* will be competed for, the Society offering $300, and each horse entered to add $50; open to all horses in the United States. Three entries to be made at least, and two at least to start. The best horse draws $300; 2d best, $100: third, $50.

SHEEP.—The Society's Medal is offered for the best Buck—also for the best pen of three ewes—open to the United States and Canadas.

IMPLEMENTS.—All instruments, machines, utensils and apparatus intended to be used in the preparation, culture or seeding of the soil, in the harvesting, transportation or manufacture of produce, or in the various requirements of agriculture, will be admitted to the exhibition. No distinction will be made between agricultural implements manufactured in or out of New-England.

ENTRIES.—Notice of the intention to enter live stock, and all other contributions should be sent to STILLMAN HUMPHREY Assistant Secretary, Concord, N. H., on or before September 1st, that proper arrangements may be made for their accommodation. It is especially requested that all exhibitors desiring *good* accommodations, should make their entries at least one week before the exhibition.

Letters of inquiry may also be addressed to Col. DANIEL NEEDHAM, Boston, Mass., and Hon. MOSES HUMPHREY, Concord, N. H., Superintendent of the grounds.

DANIEL NEEDHAM, Secretary. GEO. B. LORING, President.

Aug. 17—w3t.

FRUIT AND ORNAMENTAL TREES

FOR FALL OF 1865.

ELLWANGER & BARRY have the pleasure of offering their usual

LARGE AND COMPLETE STOCK OF

STANDARD AND DWARF FRUIT TREES,

GRAPES,

both Hardy and Foreign—old and new varieties.

STRAWBERRIES,

and other Small Fruit—all varieties worthy of cultivation.

ORNAMENTAL TREES,

FLOWERING SHRUBS, EVERGREENS, &c.

ROSES,

including a fine collection of STANDARDS 3 to 5 feet high.

TREE AND HERBACEOUS PÆONIES,

a great collection of new and beautiful varieties.

Bulbous Flower Roots, &c., &c.

The stock is vigorous, well grown, and in every particular first class. Planters, Nurserymen and Dealers are invited to inspect the stock personally, and to examine the following Catalogues, which give full particulars, and are sent prepaid to applicants who enclose stamps, as follows:

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No. 2—A Descriptive and Illustrated Catalogue of Ornamental Trees, Shrubs, Roses, &c., &c.

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MOUNT HOPE NURSERIES, ROCHESTER, N. Y.

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Agricultural Books for Sale at this Office.

FRUIT FARMS FOR SALE.—A Fruit Farm of 20 acres, one of 84 acres, and one or two others, now producing handsome incomes, all

Near Burlington, N. J.,

in the heart of the fruit region, are for sale on easy terms. Full particulars by addressing

Aug. 17—w4tm1t. BOX 83, Burlington, N. J.

"GO SOUTH."

Farm for Sale in Virginia,

36 miles from Richmond, on the Danville railroad, 400 acres, suitable for grain or grazing—well watered and timbered. A good variety of fruits. A good dwelling house and necessary buildings. Will be sold cheap: possession any time. Address G. B. STACY, Box 566, Richmond, Va.

Refer to Fowler & Wells, New-York. Aug. 17—w4t.

CHESTER COUNTY WHITE AND

Prince Albert Pigs

FOR SALE, not akin, best blood in the country, $18 per pair. Apply to R. L. PELL,

June 8—w&mtf. Pellham Farm, Ulster Co., N. Y.

FOR SALE.—The farm of the late HENRY HOWE, 2½ miles from the beautiful village of Canandaigua. It contains 140 acres, in a

Fine State of Cultivation.

Above 25,000 tiles and 60 cords of broken stone have been laid in underdrains. It has a comfortable tenant house, three good barns, sheep sheds, and a pleasant cottage dwelling house. Abundance of fine fruit, and is well watered with living springs.

Application can be made to Mr. WILLIAM SMITH, Mr. GIDEON GRANGER of Canandaigua, or to Mrs. HOWE, on the premises. Aug. 3—w4t.

BOARDMAN & GRAY'S

Patent Improved

Insulated Iron Rim and Frame

PIANO FORTES.

MANUFACTURED BY

WILLIAM McCAMMON

(Successor to BOARDMAN, GRAY & Co.,)

Albany, N. Y.

☞ SEND FOR ILLUSTRATED PRICE LIST. Mar 23—w&m,

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NEAR THE CORNER OF

LARK & LYDIUS STREETS, ALBANY, N. Y.,

WM. M. BENDER, Proprietor. | **GEORGE JACKSON,** Superintendent,

The Subscriber is prepared to furnish, Round, Sole and Horse Shoe Tile, over 13 inches in length, by the cargo, or in the smallest quantity on demand, at prices that he will defy any other parties to undersell him. He will warrant his tile hard burnt, and to fit close at the joints, and altogether superior to any made in the United States.

All tile delivered on board of cars or boat in this city free of charge. Price list sent on application.

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April 6—w&m.

MASON'S

PATENT

FRUIT JAR

THE MOST

RELIABLE JAR

FOR

Preserving Fruit.

Manufact'd by the

Sheet Metal Screw Co.

214

PEARL-ST.,

New-York City.

Je. 29—13tm3t.

PUBLIC SALE OF FINE STOCK.—I will offer for sale at PUBLIC AUCTION, at my Farm, near Xenia, Ohio,

On Tuesday, the 29th inst.,

the following valuable stock, viz.:

FORTY HEAD OF SHORT-HORNS,

consisting of BULLS, COWS and HEIFERS.

Twenty Head of Horse Stock,

principally brood MARES and COLTS, the latter being the get of the thorough-bred horse BEN BUTLER, alias SCRIBBLER. Also 200 SPANISH MERINO SHEEP (100 breeding ewes, 8 yearling bucks, and the remainder spring lambs.)

Sale to commence at 10 o'clock, A. M. Terms made known on day of Sale. Catalogues will be ready for distribution by the 20th inst. D. McMILLAN,

Aug. 17—w2t. Xenia, O.

COTSWOLD SHEEP FOR SALE.—A few thorough-breds, consisting of

Bucks, Ewes, Lambs,

&c., from best imported stock. WILLIAM REYBOLD,

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NEW IMPORTATION OF

ITALIAN QUEENS.

We have this season imported QUEENS

DIRECT FROM THE DISTRICT IN ITALY,

where, according to the last German Bee-Keepers' Convention, this variety is found in the highest purity. We are prepared to furnish queens bred from this importation, or our previous ones from Dzierzon, guaranteeing their

Purity and Safe Arrival by Express.

For prices, etc., send for circular to

L. L. LANGSTROTH & SON,

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NEW PATENT

ANIMAL FETTERS.

JUST THE THING THAT FARMERS NEED.

Light, Strong and Durable,

THE BEST EVER OFFERED TO THE PUBLIC.

SEND FOR CIRCULAR AND PRICES TO

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ALDERNEY HEIFERS,

FOR SALE.

WILLIAM REDMOND,

45 Barclay-Street, New-York.

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American Varieties of Strawberries.

The PHILADELPHIA RASPBERRY, and what is of still more importance to fruit growers, the

Willson's Early Blackberry,

the fruit of which averaged in the Philadelphia wholesale markets this year $8 per bushel. Price List sent gratis to all applicants by addressing JOHN S. COLLINS,
Aug. 10—w&m1t. Moorestown, Burlington Co., N. J.

$75 A MONTH.—Agents wanted to sell Sewing Machines. We will pay a liberal salary and expenses, or give large commissions. Address
D. B. HERRINGTON & CO.
July 13—w3tm2t. Detroit, Mich.

FOR SALE.—The thorough bred Ayrshire Bull MADISON, 14 months old; color white and red; pedigree given. Price, $50. Address
Aug. 24—w2t. G. VAN VALKENBURGH, Troy, N. Y.

The Annual Register of Rural Affairs---1866.

The Twelfth Number of THE ANNUAL REGISTER OF RURAL AFFAIRS, for 1866, is now in press. The usual amount of labor and expense have been laid out upon its contents and illustrations, and we think it will rank as one of the most interesting and useful numbers in the series.

The purpose of this notice is to apprise ADVERTISERS that a limited number of pages will be devoted to their wants, as heretofore. THE ANNUAL REGISTER remains as a work of constant reference throughout the year; it reaches thousands who are not subscribers for either of our other publications, besides its purchase by a very large majority of the subscribers to the COUNTRY GENTLEMAN and CULTIVATOR. The back numbers remain in demand year after year, so that the advertisements *are constantly brought into new hands.* And, as the sales of the ANNUAL REGISTER continue large, not only throughout the Autumn and Winter, but also late into the coming Spring, we may suggest that advertisers should bear in mind this fact in the preparation of their favors: manufacturers of Mowing and Reaping Machines, Plows and other Implements, as well as Nursery and Seedsmen, Breeders, etc., will "be first in the field" for 1866, by taking this medium of reaching the Agricultural Public.

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☞ Many have been disappointed in securing advertising space in the ANNUAL REGISTER, each year, from failing to make their wishes known in season. Some of our largest and most constant advertisers were thus excluded from the last number. Those who are not prepared to send "copy" at once, which is not absolutely necessary, can be accommodated by bespeaking the space desired, and we will inform them, in due season, when the advertisement itself must be put into the printer's hands.

Albany, August, 1865. LUTHER TUCKER & SON.

20,000 GRAPEVINES FOR SALE.—Forty best native varieties. Also other Small Fruits. Send for a Catalogue. R. B. SHAW,
Sept. 1—m1tw2t. Canandaigua, N. Y.

ALDERNEYS FOR SALE.—An Alderney Cow and an Alderney Bull, each three years old, and taken from the celebrated herd of Hon. John T. Norton. Farmington, Conn., will be sold together or separately. For particulars address REV. O. L. WOODFORD,
Sept. 1—mtf. West Avon, Conn.

See Grapevine Advertisement.

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Great Agriculturist,

AND OTHER VARIETIES BY MAIL,

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BURR'S NEW PINE, best flavored.
WILSON, very productive.
BOSTON PINE, good.
TRIOMPHE DE GAND, family or market.
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The above at 40 cents per dozen; $1.50 per 100.
J. H. FOSTER, JR.,
Aug. 24—wtf. Box 660, West Newton, West'd Co., Pa.
Grapevine Advertisement after September 15. Prices lower than last Spring.

WEBB SOUTH-DOWNS.—Thirty EWES, 25 EWE LAMBS, 20 RAM LAMBS and YEARLINGS and the celebrated IMPORTED RAM ARCHBISHOP, for sale this fall. GEORGE H. BROWN,
Millbrook, Washington Hollow,
Aug. 24—wtf. Duchess Co., N. Y.

SUFFOLK BOAR.—I offer for sale my pure blooded IMPROVED SUFFOLK BOAR, bred by Stickney of Boston, from imported stock. Said hog is two and one-half years old, heavy bone, and well haired has always had the best of success, and is without doubt one of the best hogs in the State. Price, $50. J. H. JEWETT,
Aug. 24—w1t. Moravia, Cayuga Co., N. Y.